Chapter 6. The Cycles Present in Share Price Data

In the last chapter we showed that any cyclical waveform is defined totally by three quantities – its wavelength, its amplitude and its position in time. We also showed that complex data in which two different cycles were superimposed on random movement could be analysed by the use of moving averages or graphical channel analysis so that future movement of the data could be predicted with an accuracy that depended upon the amount of random movement present. This leads to the conclusion that for such analyses to be of any use in predicting the behaviour of share prices, the following should be an essential prerequisite:

- The amount of random movement should be relatively small.
- The number of different cycles present should also be small.
- These cyclic components should be present to a greater or lesser degree in all share price movement.

We said in the last chapter that we could do nothing about predicting random price movement, since by definition, random movement is unpredictable movement. If 50% of a share price movement is random, then the best that we can achieve is to predict the other 50% non-random movement. If random movement accounts for less than 10% of the share price movement, then we are in the fortunate position of being able to predict, at least theoretically, over 90% of the future price movement.

Fortunately for us, the majority of share price movement is non-random, although the proportion varies from one share to another and from one time period to another in the history of any one share. Therefore, we do have the possibility of achieving good price predictions over the short term.

If the great proportion of price movement is not random, then it is important that the number of cyclic components present is not large,

otherwise the analysis reaches such a level of complexity that powerful computers are necessary to wade through all the mathematics necessary to resolve these. Again, fortunately, the number of important cycles which can be discerned in share price data amount to just a handful, and these are present to a greater or lesser degree in all share prices. This means that each share price can be treated somewhat similarly, and reduces the amount of work which would have to be done if all share prices were completely different. This fortunate combination of circumstances makes it possible for us to apply the techniques we used in the last chapter with a high probability of success.

Table 6.1 Known cycles in share price data

Years	Months	Weeks	Days (business)*	Relative amplitude
54				150
36				132
16				117.1
9.5				95.8
9.2				93.1
7.1				82.5
4.3	51	223		55.75
3.2	38	166		41.5
1.8	21	94		23.5
0.8	9.6	42		10.5
		33	165	8.25
		9	45	2.25
		7	35	1.75
		4	20	1
* Five business days in a week.				

Work carried out by a number of analysts this century has led to the conclusion that the main cycles which can be identified in share price data are those shown in Table 6.1. As far as the amplitude of the cycles is concerned, this appears to be directly proportional to the wavelength of the cycle until we get up to cycles of wavelength longer than 4.3 years. The amplitude then increases more slowly than this direct relationship. Thus the amplitude of the 4.3-year cycle is about 1.34 times that of the 3.2-year cycle (4.3/3.2 = 1.34), but the amplitude of the 9.2-year cycle is only

1.67 times that of the 4.3-year cycle and not the 2.13 times it would be if the increase was directly proportional to the wavelength. Likewise the amplitude of the 16-year cycle is about 2.10 times that of the 4.3-year cycle and not the 3.72 times we might have expected.

These amplitudes, of course, rank the cycles in order of their importance in their effect on the share price, since obviously the 4.3-year cycle moves the price over 50 times more than does the 4-week cycle. This ranking of the amplitudes has to be tempered by the practical aspects of the needs of the investor. It is no good telling him that the 36-year cycle has just passed its peak and that he should not invest for another 18 years when the cycle starts to rise again! To all intents and purposes the investor has to concern himself with cycles of 4.3 years and lower wavelengths. As we shall see, the investor still makes a considerable profit if he can judge the turning point of a shorter duration cycle even if a longer-term one is headed downwards. The best moves in the share price are made when several cycles have arrived at their troughs, and the upward movement in all of them occurring at nearly the same time will be additive in effect, as we noticed for the simple examples in Chapter 4.

So far we have given the impression that the cycles present in share prices are permanent, and that all of the uncertainty in movement is due to random movement. However, we now have to draw attention to another fact, and that is that the cycles themselves are subject to variation. The variation occurs in two dimensions – in the wavelength and in the amplitude. The variation in wavelength usually amounts to a small percentage of the actual wavelength. In real terms it means that we have to predict a "window of time" for the occurrence of a future peak or trough rather than an exact point in time. Taking the 42-week cycle in share prices as an example, the next peak could occur at any point from say 40 weeks to 44 weeks onwards from the previous peak. A difference of more than 10% before or after the expected position for a peak would be unusual.

The use of a time window in the analysis of a share price does not cause any difficulty, since the investor will start to expect a cycle to turn upwards or downwards at the beginning of the window, and will not be

unduly perturbed when the turn does not come instantly. The important point is that he is expecting it to occur and will recognise its occurrence when it happens, even though it is later than expected. The effect of this variation in wavelength and the use of a time window is illustrated in Figure 6.1.

The effect of variation in amplitude means that a peak or trough may occur at a higher or lower point on the price scale than expected by comparison with a previous peak or trough. In other words a peak or trough can undershoot or overshoot the predicted price level. This effect is illustrated in Figure 6.2.

Figure 6.1 Wavelength variation – how a time window has to be applied to take care of the uncertainty in the prediction of when a trough will occur

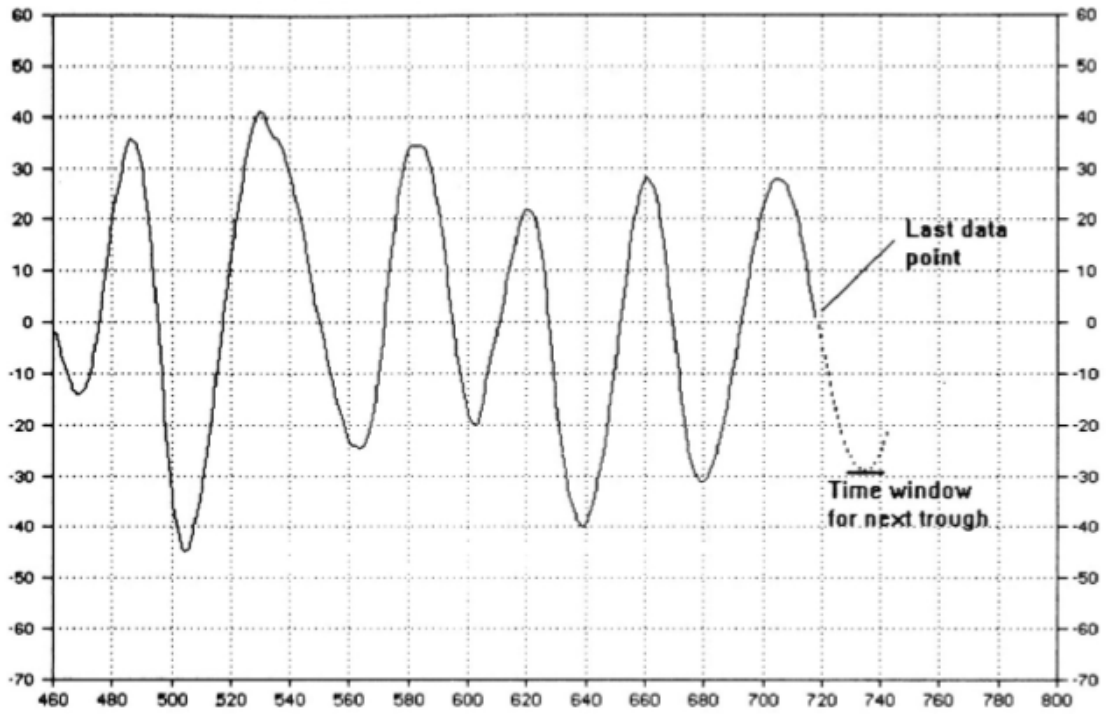
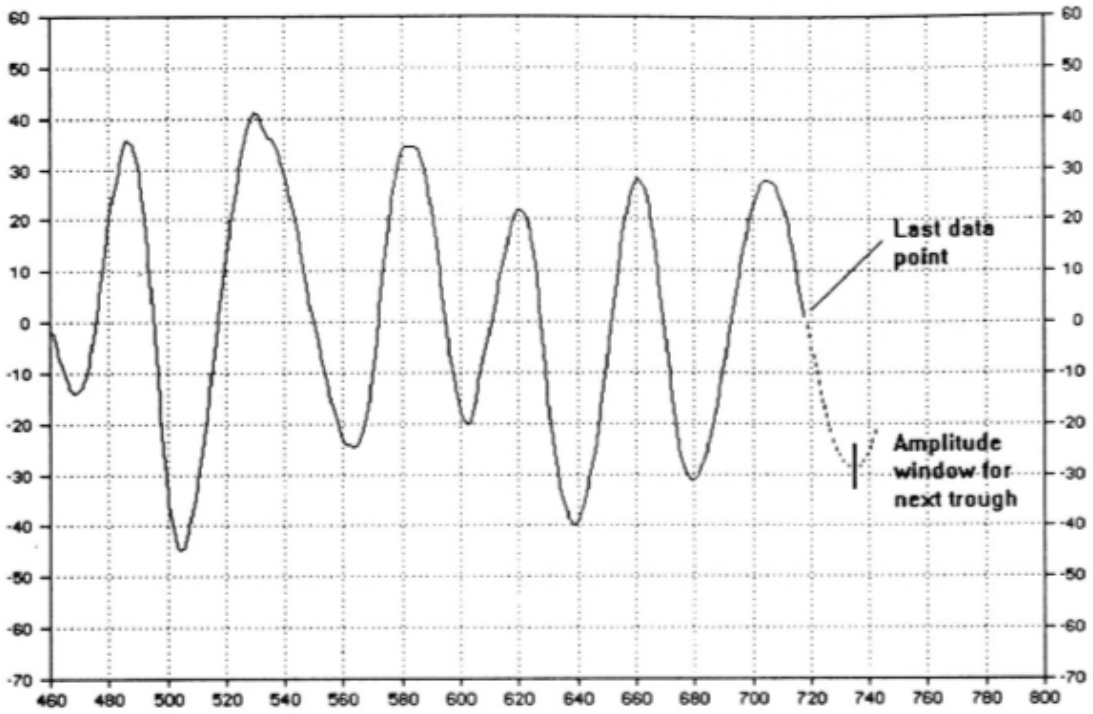


Figure 6.2 Amplitude variation – how an amplitude window has to be applied to take care of the uncertainty in the prediction of the depth of a future trough

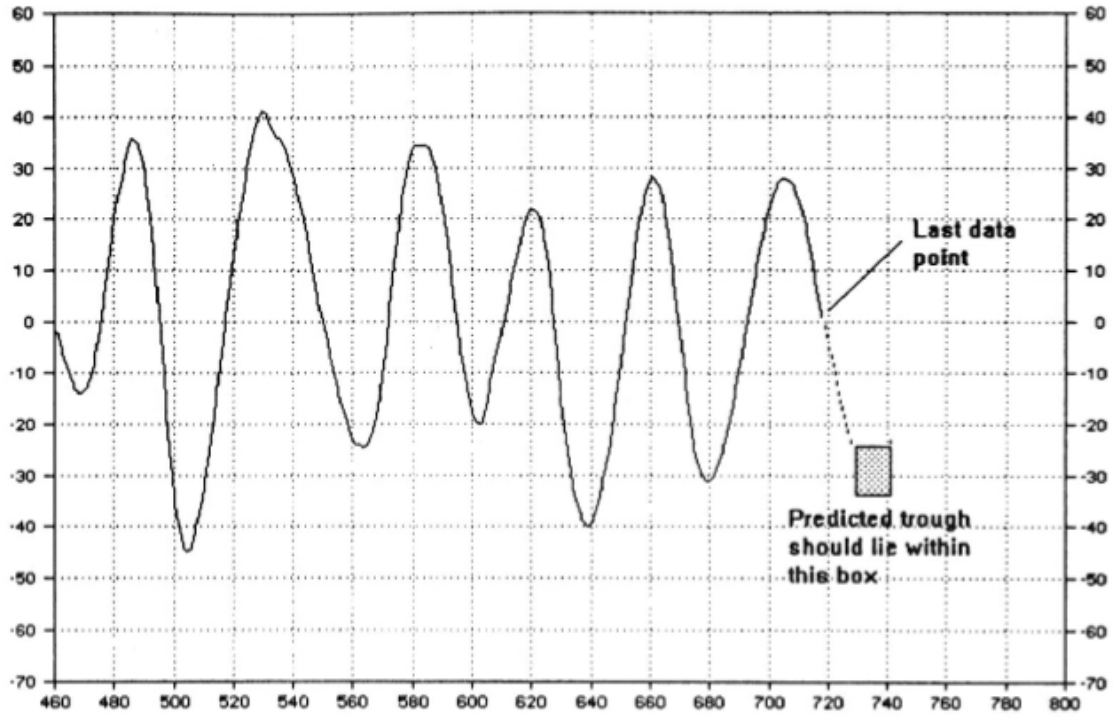


The variation in amplitude can be so severe that a cycle can cease to exist at a certain point in time, reappearing much later and building up in amplitude. The fortunate aspect of this variation in amplitude is that the change is not abrupt but gradual in nature. Amplitude can slowly decrease over a period of say five or six complete wavelengths and then begin to increase slowly back to somewhere near the maximum amplitude. Another way of looking at this is to say that the amplitude exhibits its own cyclicality. This change in amplitude is one reason why it is not sensible to predict too far ahead. The amplitude five complete wavelengths into the future is much less predictable than the amplitude just one wavelength into the future. As with the variation in wavelength, amplitude variation is such that a peak or trough is normally no more than 10% above or below the point which the last peak or trough reached on the price scale.

Since we have now established that there is a horizontal uncertainty in a peak or trough position (i.e. in wavelength) and a vertical uncertainty (i.e. in amplitude) then these two uncertainties combine to form a rectangular "prediction box". The exact centre of the box is the predicted point at which the peak or trough should occur in time and in amplitude, and

obviously the dimensions of the box reflect the uncertainty. The more certain we are about the prediction point, the smaller the box, while conversely if we are rather uncertain, then the box will be larger. The concept of a prediction box is illustrated in Figure 6.3.

Figure 6.3 How the variation in amplitude and wavelength means that a "prediction box" must be drawn for the estimated position of a future trough



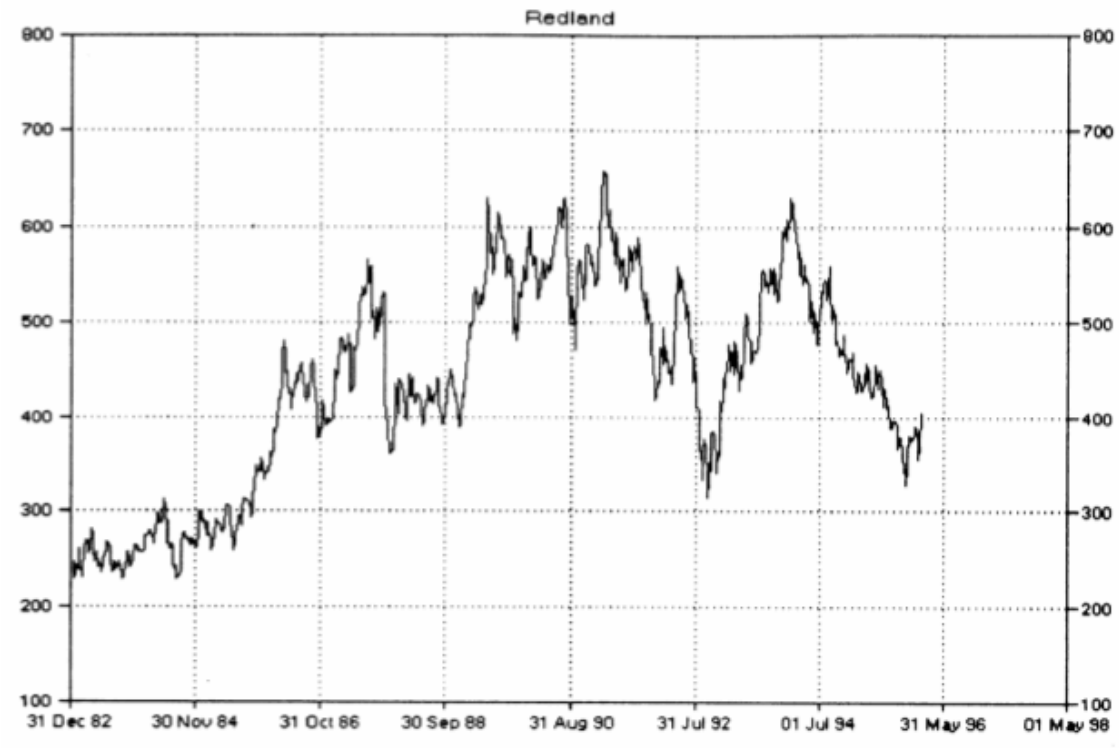
Since the box has finite dimensions, a share price can spend some time in it before making the predicted move upwards or downwards. It is not correct to make our investment or disinvestment at the moment the box is entered, because we may find that the share price hovers at about the same level for a number of weeks. We might also find that temporary random forces are such as to negate the movement completely so that the anticipated move does not occur. Because of this it is necessary to devise techniques to apply to the share price once the box has been entered in order to decide the optimum moment to take action or to decide that the optimum moment may not arrive at all. This approach can only be illustrated later when real examples are discussed.

Having spent some time in the analysis of artificially generated complex waveforms, it is now time to apply the techniques to a share price history.

AN ANALYSIS OF THE REDLAND SHARE PRICE

The share price history of Redland is shown in Figure 6.4. A number of cycles can be observed quite easily. Note that even the sharp fall during the crash of 1987 was followed by an equally sharp rise.

Figure 6.4 The share price of Redland since the beginning of 1983

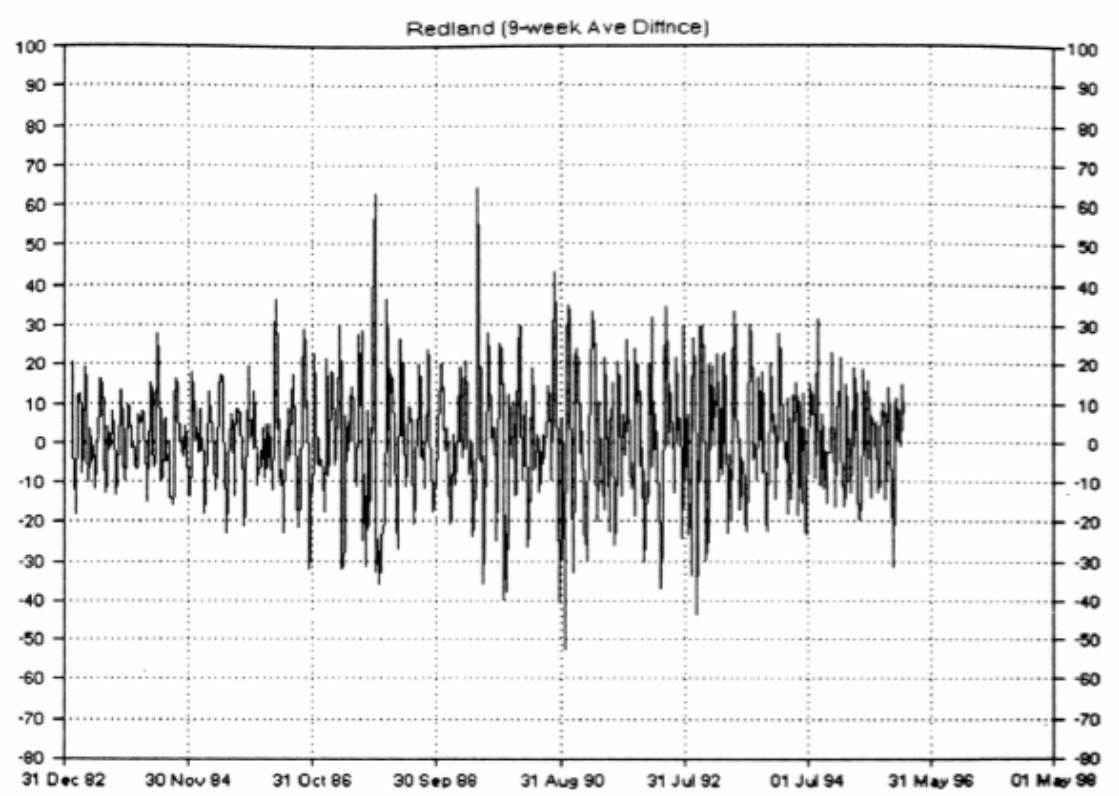


Random and Very Short-Term Movement

The analysis should start by answering the question about the degree of random content in the movement of the Redland share price. The week-to-week random movement is rather difficult to unravel from very short wavelengths of a few weeks' duration, but we can start by isolating the combination of these two. In previous chapters we showed that very short-

term and random movement could be removed by using a moving average of short span, or highlighted by calculating a short span moving average difference. As a start, a span of say nine weeks would be useful in separating out all movement of nine weeks and less periodicity, including random movement, from the longer-term cycles which sweep the price up and down by quite large amounts. The nine-week average difference is shown in Figure 6.5.

Figure 6.5 The nine-week moving average difference of the Redland share price. This shows random movement and any cyclical movement of nine weeks' periodicity or less. Note that the majority of the movement lies between -20 and +20p, i.e. is less than 40p on the vertical price scale



Note that most of the time, this random/short-term movement only swings between the -20 and +20 points on the vertical price scale. This means that 40p of the price movement of Redland shares is accounted for by random week-to-week movement and cyclical movement of 10 weeks' or less wavelength. Since the Redland share price ranged from a low of

approximately 250p to a high of 650p in the chart, i.e. a change of 400p, taking the whole period from the beginning of 1982, then most of the time the random and short-term cyclical fluctuations account for about 10% of the total price movement. This very important and surprising fact can be expressed in another way: taken on average over an eight-year period, about 90% of the Redland share price movement is due to a combination of cyclical movements of greater than nine weeks' periodicity. Since we have learned how to isolate the various cycles which may be present in complex data, then we appear to have the key to predicting the future Redland share price!

This exciting prospect has to be tempered somewhat by rather more consideration of the nature of the random or unexpected movement. We pointed out that the random movement and short-term movement was about 10% over a 14-year period, in other words it averaged this over a long time. Unfortunately, an average value derived from a large number of values can contain a few extreme values. A closer look at Figure 6.5 shows that the random or short-term movement did reach much more extreme values than 10% on about a dozen occasions over the 14-year period. On two of the occasions they accounted for swings of about 80p in the share price. Of course, we do not particularly care whether we call these swings random or short-term movement. The fact is that their amplitudes were much larger than expected and they came out of the blue. Any price predictions made just prior to their occurrence would therefore have been considerably in error.

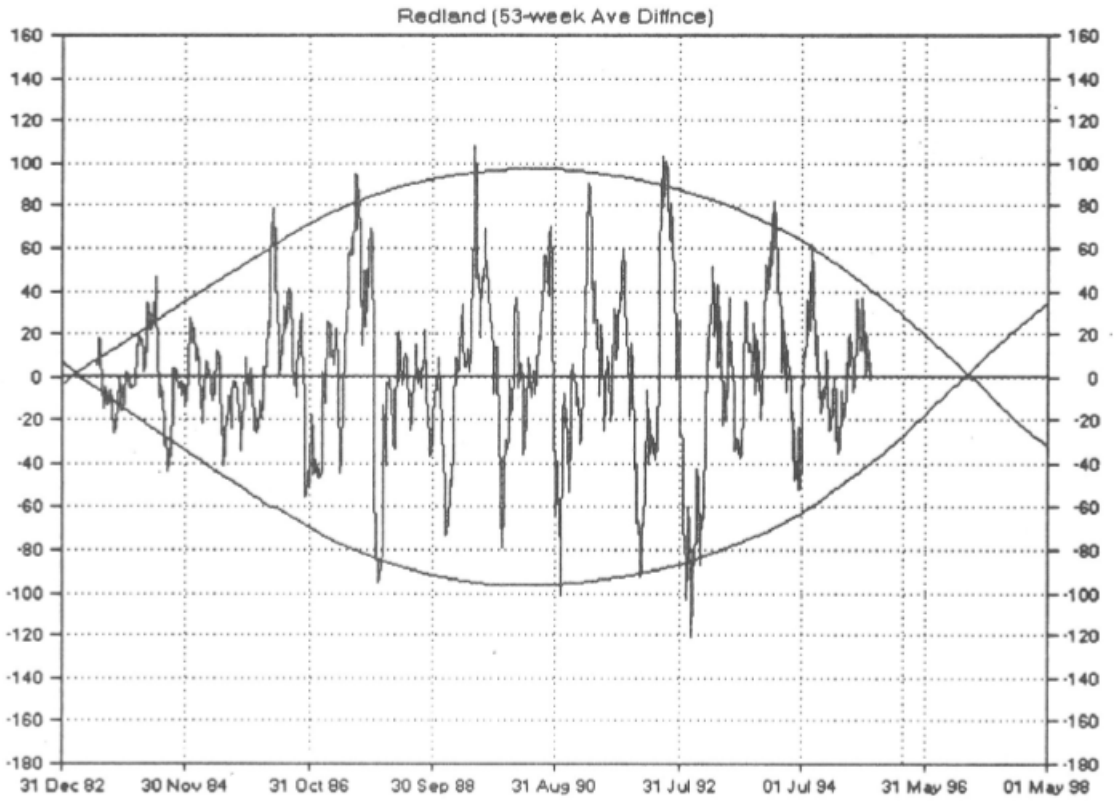
This fact has to be clearly understood – most of the time the random and short-term fluctuations will amount to only about 40p of any price movement, and this is the tolerance we will have to put on predicted price movement. The probability is therefore that our predictions will be good, but about one in every 20 predictions will experience this unexpectedly large rise or fall. Since in the case of Redland there were 12 occasions of such a large swing in 14 years, the average time elapsed between such swings is just over one year. The longest length of time without such a large unexpected rise or fall was nearly 200 weeks, and the shortest about 20 weeks. From this we can come to a conclusion that it is unlikely that

such a large unexpected effect will occur within 20 weeks of the last such occurrence. We can therefore see that our predictions at points in time a few weeks after such a large swing should be much more accurate than those which may be made when a swing of this nature has not occurred for a long time. If we predict only a short period ahead we are less likely to be caught by the unexpected than if we try to predict say for six months or a full year ahead of the present time.

Movement of Less Than 53-Week Periodicity

Since the method of looking at random and very short-term movements in Redland was successful in showing that about 10% of the price movement fell into this category, it is useful to look at longer-term fluctuations. In Figure 6.6 is shown the 53-week average difference of the Redland share price. This shows up random movement plus any cycles of less than one year's periodicity.

Figure 6.6 The 53-week moving average differences of the Redland share price shows random movement plus cyclical movement of less than one year's periodicity. The amplitude is varying in a long-term cyclical fashion as shown by the boundaries



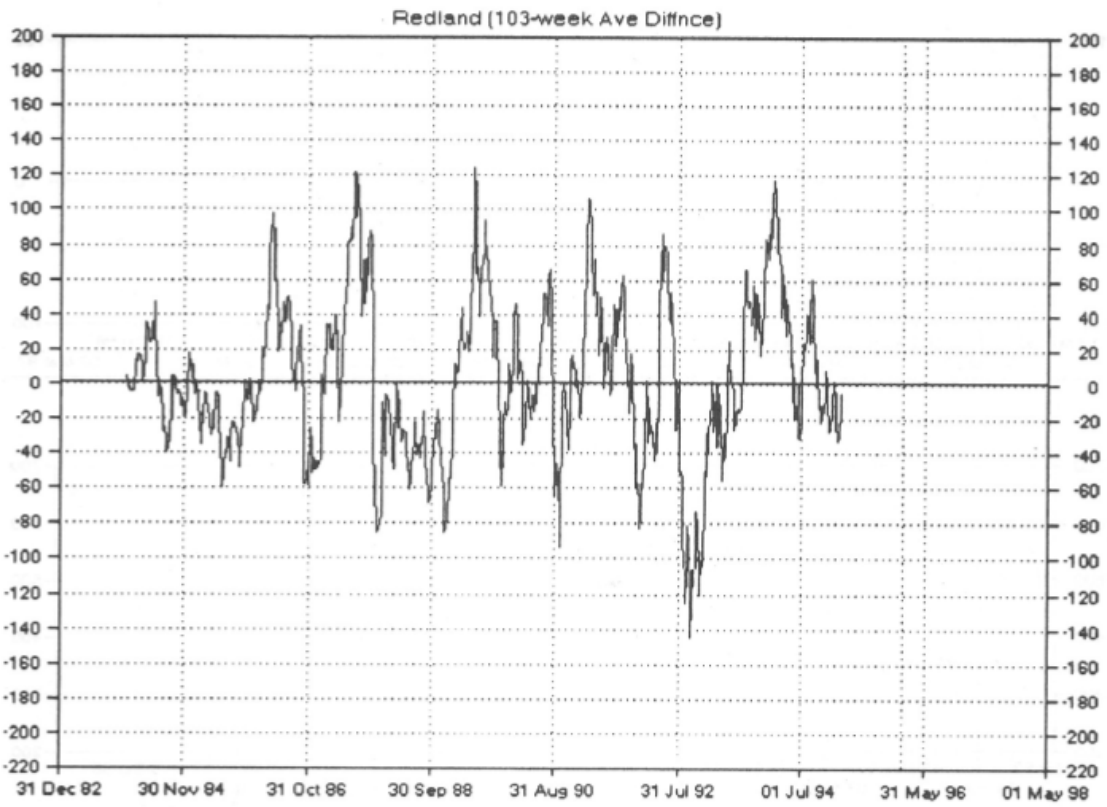
The response shown in Figure 6.6 also includes all of the movement shown in Figure 6.5. We can see that most of the movement fell between -60p and +60p, i.e. 120p on the vertical scale. On about 12 occasions the movement fell outside these limits. Thus we can see that the fluctuations of less than one year's periodicity therefore accounted for about 30% of the overall price range of 400p.

It is interesting to see the gradual change in amplitude of these short-term cycles over the 14-year period covered by the data. In Figure 6.6 an envelope is drawn around these fluctuations in order to highlight the regular nature of the change. The combined amplitude passes through a maximum between 1989 and 1992, and at the time of writing is at a level similar to that seen in 1983.

Movement of Less than 103- Week Periodicity

Using a l03-week average difference, the chart shown in Figure 6.7 is produced. Now, most of the movement lies between -80p and +80p, with a few larger movements running from -140p to +120p. Thus these fluctuations of less than two years' periodicity account for 160p, or about 40% of the overall price movement. This is about as far as it is possible to go in looking at the contributions of wide categories of cycle periodicities to the share price, but it has been a very constructive exercise.

Figure 6.7 The 103-week moving average difference of the Redland share price shows random movement plus cyclical movement of less than two-years' periodicity

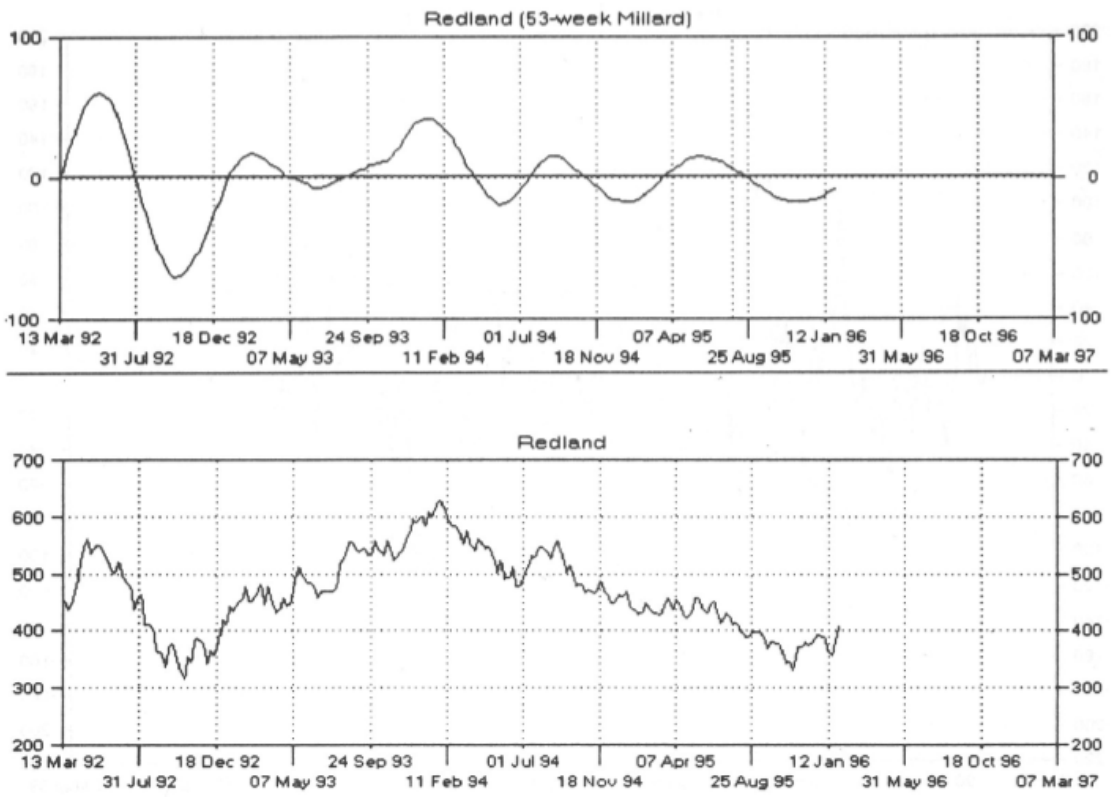


Selected Cycles in Redland Price Data

By using the cycle highlighter which was discussed in Chapter 4, information about the current and near-future status of selected cycles can be obtained. By using a selection of such cycles, it is possible to come to a conclusion about the most likely direction of the share price over the near future. Since the previous exercise showed us that 30% of the price movement could be attributed to cycles of less than two years' periodicity, then the status of the one-year, six-month and three-month cycles will be useful.

The 53-week cycle, plus the share price data, is shown in Figure 6.8. The data end on 2nd February 1996. It can be seen that the cycle has passed its low point and is now rising. The low point in the cycle was on 24th November 1995, and the next predicted high point, half a span, i.e. 27 weeks, into the future, will be on 31st May 1996. From the current point of 2nd February we can therefore expect 17 weeks of rise before the peak is reached. Its low point on 24th November corresponds also to a point in time somewhere between the two recent low points in the share price of 345p and 375p. The amplitude of the cycle has decreased considerably from the value of about 120p in 1992, and is now accounting for about 40p of price movement. At the current price level of 400p, this means that a correct interpretation of its low point would give the investor a probable 40p, i.e. 10%, price rise even if other favourable cycles are ignored. Since we are now just past the low, we would anticipate that this cycle should contribute a rise of about 30p to the share price over the next 17 weeks.

Figure 6.8 The 53-week cycle in Redland isolated by means of the cycle highlighter



Moving to shorter-term cycles, the 27-week cycle is shown in Figure 6.9. This can be seen to be falling at the time of the latest data point, 2nd February 1996. The last peak was at 15th December 1995, so the next low would be half a span, i.e. 13 weeks, on from this point. This takes us to 22nd March 1996. Since the latest data point is on 2nd February 1996, we expect a further seven weeks of fall before the next trough is reached. It can be seen that the latest point of the cycle is below the zero level, so we expect this cycle to contribute a fall of about 15p over the next seven weeks.

Figure 6.9 The 27-week cycle in Redland isolated by means of the cycle highlighter

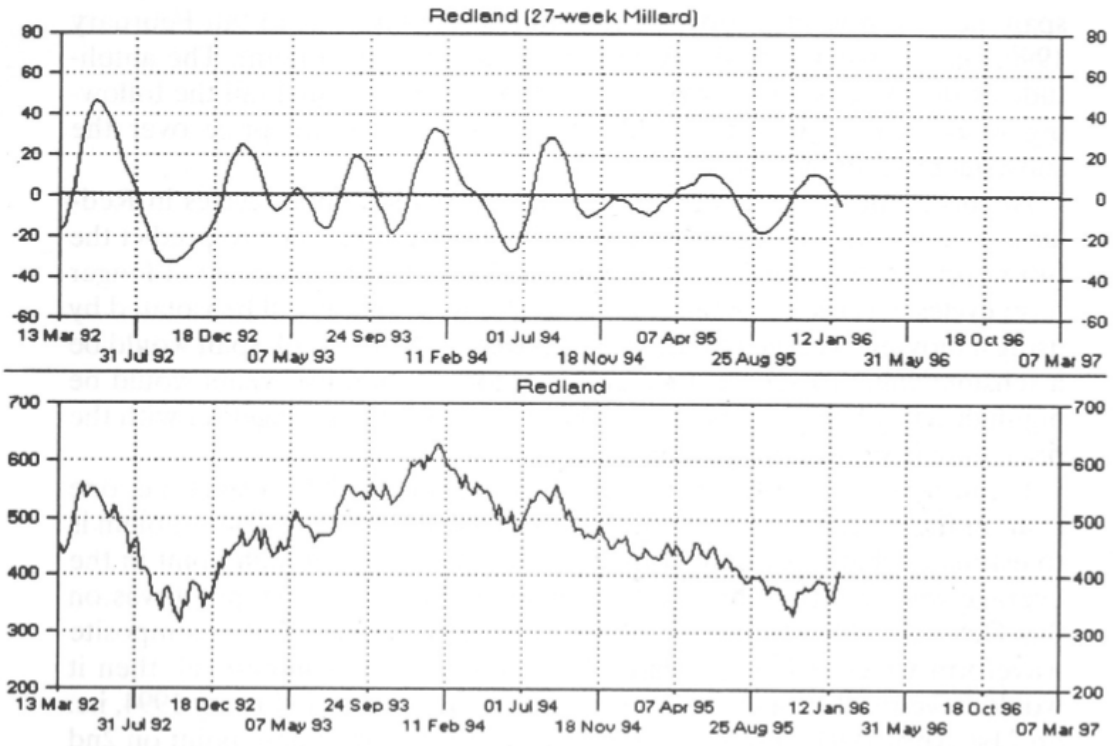
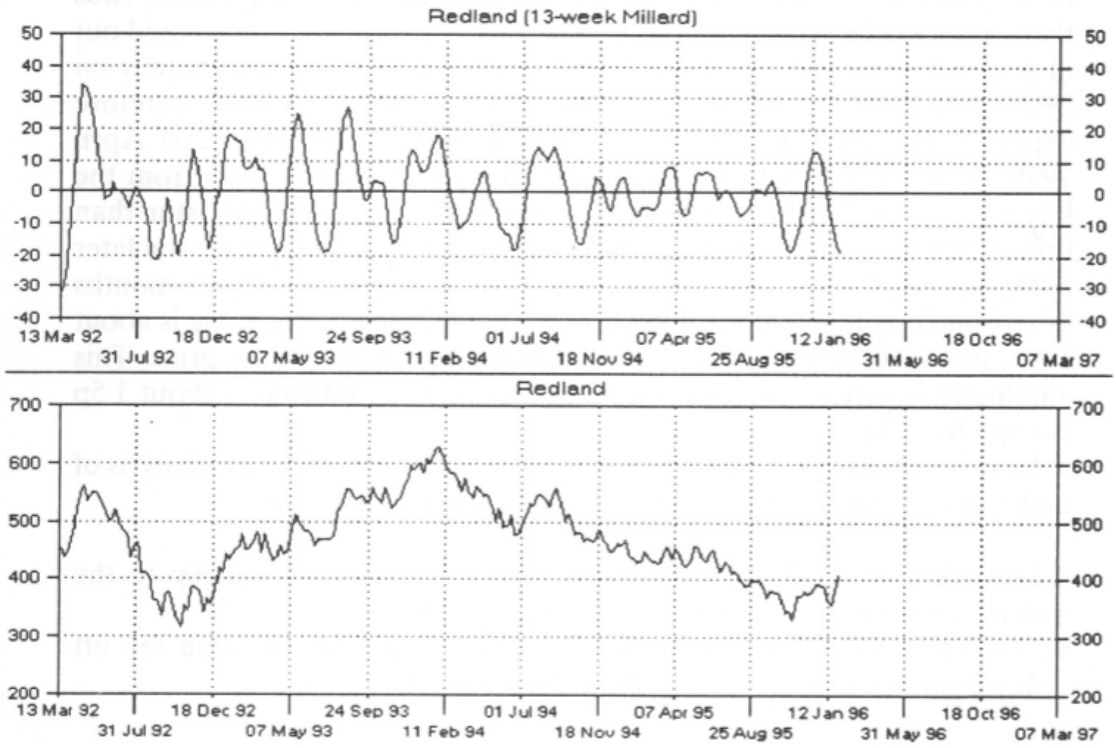


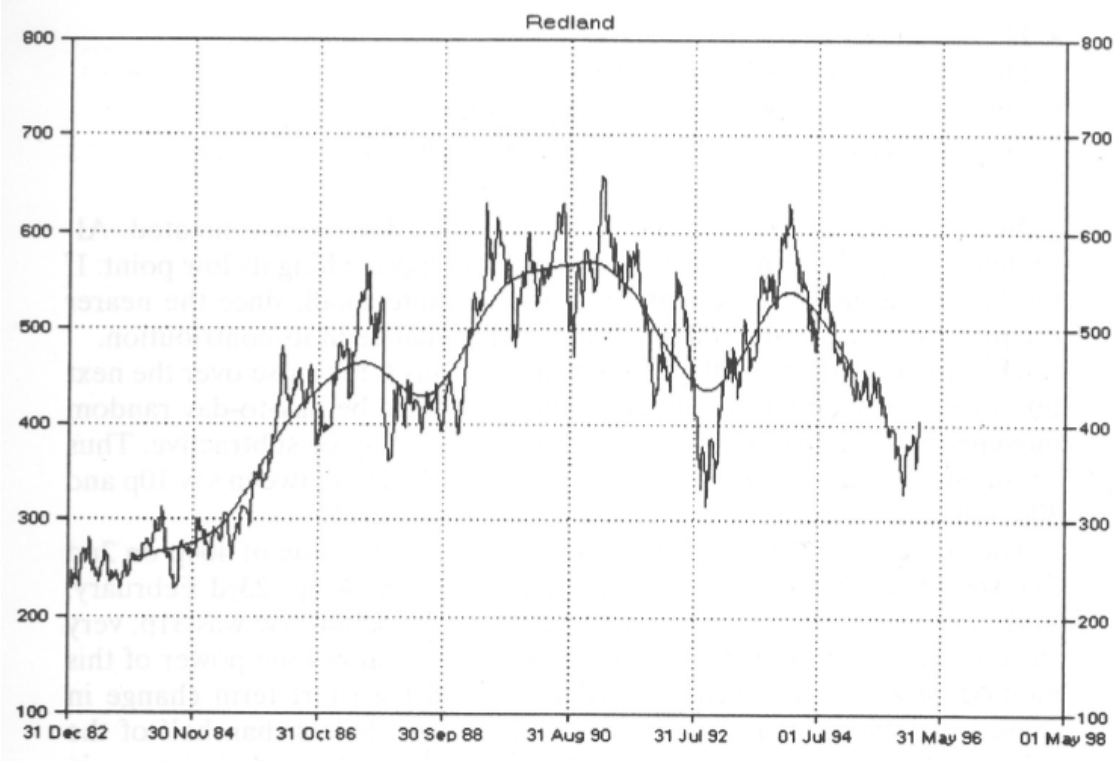
Figure 6.10 The 13-week cycle in Redland isolated by means of the cycle highlighter



The 13-week cycle is shown in Figure 6.10. The last high point in the cycle was on 22nd December 1995, and the next low point would be half a span, i.e. seven weeks, further on in time. This takes us to 9th February 1996, i.e. one week into the future from the latest data point. The amplitude of the cycle is about 30p, so, following a further small fall the following week, it is expected to add some 30p to the share price over the subsequent seven weeks.

At this point we have a great deal of information about cycles in Redland of 53 weeks' or less periodicity. Before using these data to predict the future price behaviour in Redland it is important to have a view of longer-term cycles. Cycles of longer than 53 weeks' wavelength will be isolated by using a moving average of more than 53 weeks. A 103-week span would be a sensible value to select, since cycles of longer than two years would be highlighted by applying this span. The 103-week average together with the price data is shown in Figure 6.11.

Figure 6.11 The centred 103-week average of the Redland share price is superimposed on the price data. Long-term cycles are very obvious



It can be seen that this average, which terminates half a span, i.e. one year, in the past, was still falling at its last calculated point. The problem is to estimate what it is doing at the present time. The last high point in the average was at 14th February 1994, while the previous low point was on 9th October 1992. These are 66 weeks apart in time. If the composite waveform which is being isolated by this average is symmetrical, then it would have reached a low point 66 weeks on from 14th February 1994, i.e. on 21st April 1995, about ten months prior to the latest data point on 2nd February 1996. Quite obviously, we are in a situation where, if this long-term cycle has not turned up, then the turnaround is greatly overdue. Thus there is a very high probability that the long-term trend has bottomed out or is about to bottom out. If the long-term trend bottomed out exactly on 21st April 1995, i.e. was perfectly symmetrical, then we would therefore expect a rise which would last for at least 66 weeks on from 21st April 1995, i.e. until 26th July 1996. This is still some 25 weeks away from the latest point on 2nd February 1996. If the cycle bottomed out later than this, or has yet to bottom out, then the long-term trend will peak even later in the future. Thus, at the very minimum we can expect nearly six months of a rising long-term trend. Since the latest amplitude of this cycle is about 100p, this upward trend should add that amount to the share price. This amplitude is spread over a nominal 66 weeks, i.e. contributes about 1.5p per week to the share price rise.

Now is the time to list all of the facts we have obtained by this analysis of cycles in order to be able to make a prediction for the future:

- 13-week cycle: will rise over the next seven weeks, adding 30p to the share price at the rate of just over 4p per week.
- 27-week cycle: will fall over the next seven weeks, taking some 15p off the share price at the rate of about 2p per week.
- 53-week cycle: will rise over the next 17 weeks with an anticipated contribution of 30p to the share price at the rate of about 0.75p per week.
- Longer wavelengths: the sum of all these has probably already started to rise. The amplitude of about 100p means that this will cause a rise

of about 1.5p per week.

Short Term Prediction from the Data

How far ahead we can predict in the short term depends upon the value of the shortest wavelength that we have extracted. In the above case we extracted a 13-week cycle, which means that the peak-to-peak distance is 13 weeks, while the trough-to-peak distance is six or seven weeks. Bearing in mind the comments at the beginning of this chapter on wavelength and amplitude variation, it is dangerous to predict further ahead than half of a wavelength, and preferably even less than this. Thus, with a 13-week cycle as the shortest cycle in the data, a prediction of the situation about five weeks ahead is about optimum. Thus, over the next five weeks:

- The 13-week cycle will add 5 x 4p = 20p
- The 27-week cycle will remove 5 x 2p = -10p
- The 53-week cycle will add 5 x 0.75p = 3.75p
- The long-term cycle might add 5 x 1.5p = 7.5p

Note that the position of the long-term cycle has been estimated. Although it might be rising, it might also be just approaching its low point. If the latter, the negative contribution will be quite small, since the nearer the peak or trough, the smaller is the weekly change in its contribution.

Thus the net effect of all of these contributions is for a rise over the next few weeks, probably of about 20p. There will also be day-to-day random movement occurring, which may be additive, or may be subtractive. Thus we should put a range on the anticipated rise as being between say 10p and 30p, but at least we can predict a rise rather than a fall.

The actual progression of the share price from its value of 404p on 2nd February was: 9th February, 412p; 16th February, 418p; 23rd February, 417p; 1st March, 435p; 8th March, 419p. Thus the actual rise was 31p, very close to the top end of the predicted range. This shows the power of this method of extracting cycles in order to predict a short-term change in

share price, with the proviso that the short term is less than half of the value of the shortest wavelength that has been extracted. Investors in traded options will immediately see the value of such short-term predictions.

Longer-term Prediction from the Data

Since the longest term cycle isolated from the 103-week average is predicted to top out on 26th July 1996 at the soonest, we can make a prediction about the share price on 26th July 1996, i.e. over five months into the future. We will have to estimate at what point each of the shorter-term cycles will be in their development by that point in the future, subject to the comments on variation in wavelength and amplitude. We can now start to see the value of predicting the long-term cycle, since by 26th July it will have added about 40p to the current value (404p) of the share price on 2nd February. Thus the relative importance of the short-term cycles in the overall picture is diminishing rapidly, so that the uncertainty in their position is much less important than when a short-term prediction is made and the long-term cycle makes very little contribution.

If, for the purposes of making some kind of prediction, we assume the short-term cycles to behave completely regularly, then by 26th July 1996 their status will be as follows:

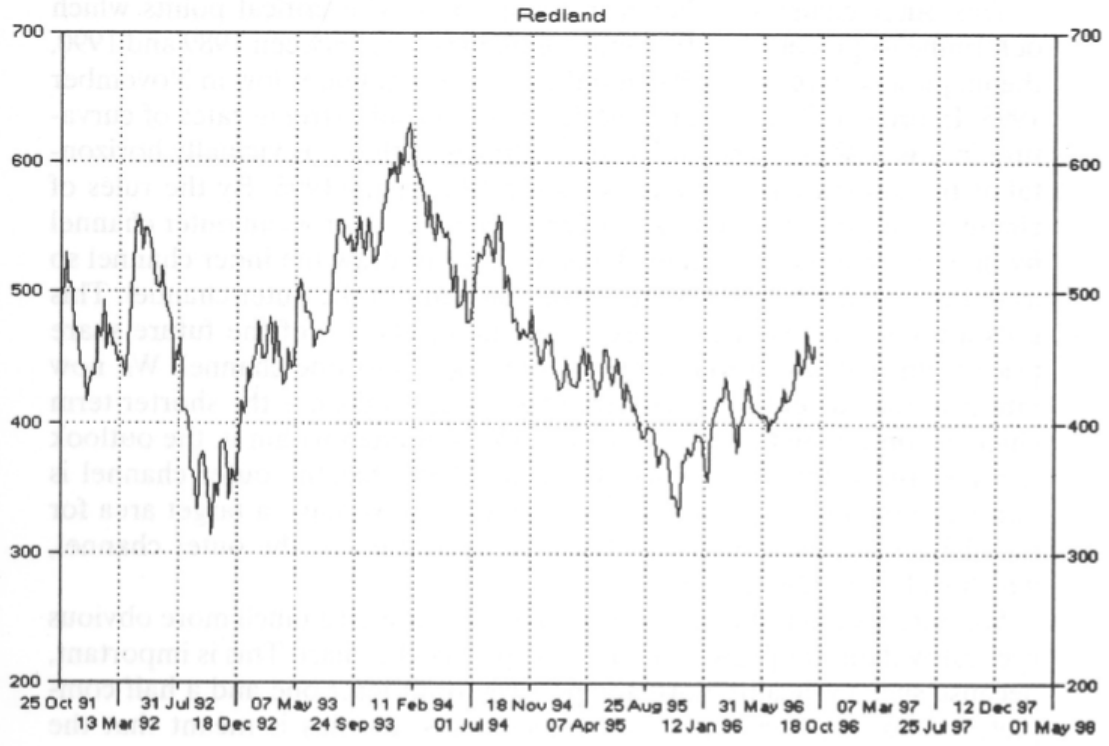
- 13-week cycle: will bottom out in about two weeks
- 27-week cycle: nearly halfway down to its low point
- 53-week cycle: about one-third of the way down to its low point
- Longer wavelengths: probably at the top or nearly so

In order to predict, we will have to take the change in contribution from what it was on 2nd February to what it is estimated to be on 26th July.

The 13-week cycle is at about the same position, so there will be no net contribution from this. The 27-week cycle is also at about the same position, so there will be no net contribution from this. The 53-week cycle was about one-third of the way up from the bottom on 2nd February,

whereas it is predicted to be one-third of the way down on 26th July. The difference in contribution is therefore about one-third of the amplitude, one-third of 40p, or 13p higher than it was on 2nd February. Thus the net effect of these cycles is to add 13p to the price of 404p, while the long-term cycle will add perhaps 40p to the price, giving an estimated price on 26th July of 457p.

Figure 6.12 The share price of Redland up to the end of September 1996



The share price movement of Redland up to the end of September 1996 is shown in Figure 6.12. While the price was at 415p on 26th July, i.e. only 11p higher than on 2nd February, it then moved up rapidly to reach the estimated level of 456p on 23rd August 1996. Thus our prediction, while correct in actual price, was about one month premature in the timing. Bearing in mind that our estimation of the position of the long-term cycles was based on the fact that the long-term cycle had probably bottomed out, this is an excellent achievement from first principles, and shows the value

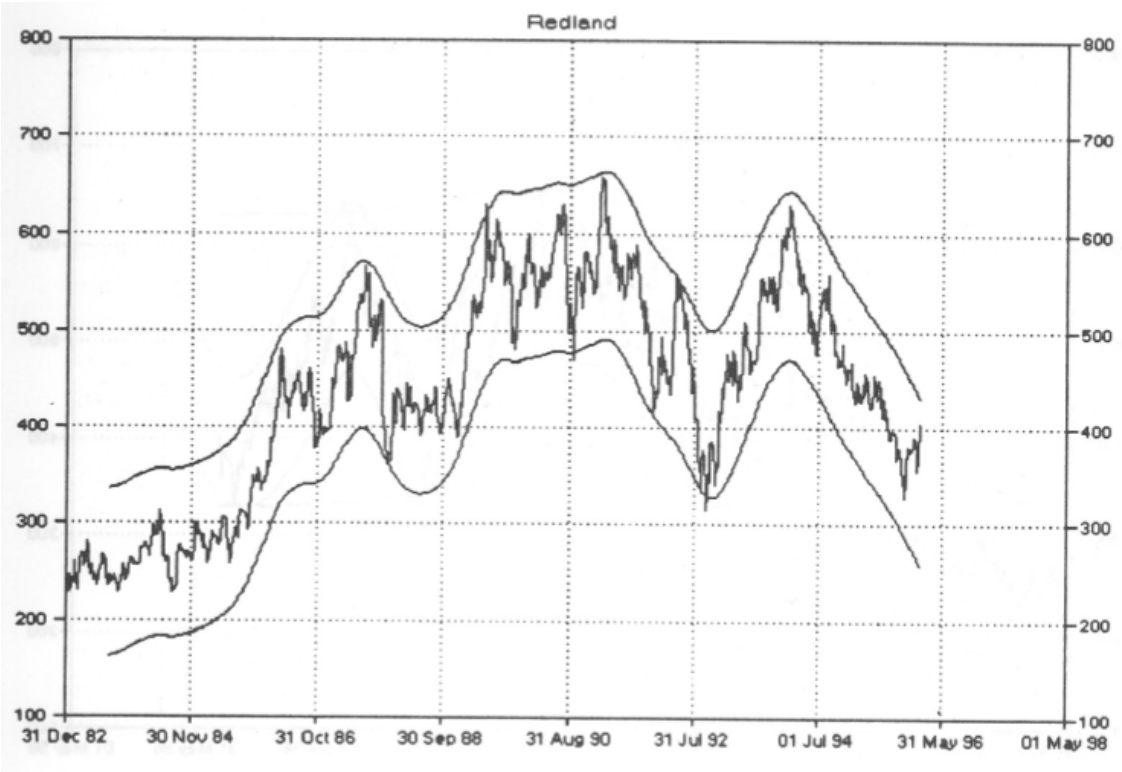
of a structured approach to price prediction using cycles in the share price data.

Prediction Using Channel Analysis

It is now of interest to carry out a prediction of the Redland share price based on the channel analysis method which was applied to artificial data in Chapters 4 and 5 to see if it is consistent with the results obtained purely from the application of cycle analysis.

Figure 6.13 shows a channel drawn around the Redland share price. The first impression from the chart is that the channel is currently falling, but that the price possibly bounced up from the bottom boundary of the channel in November 1995 when it reached 328p.

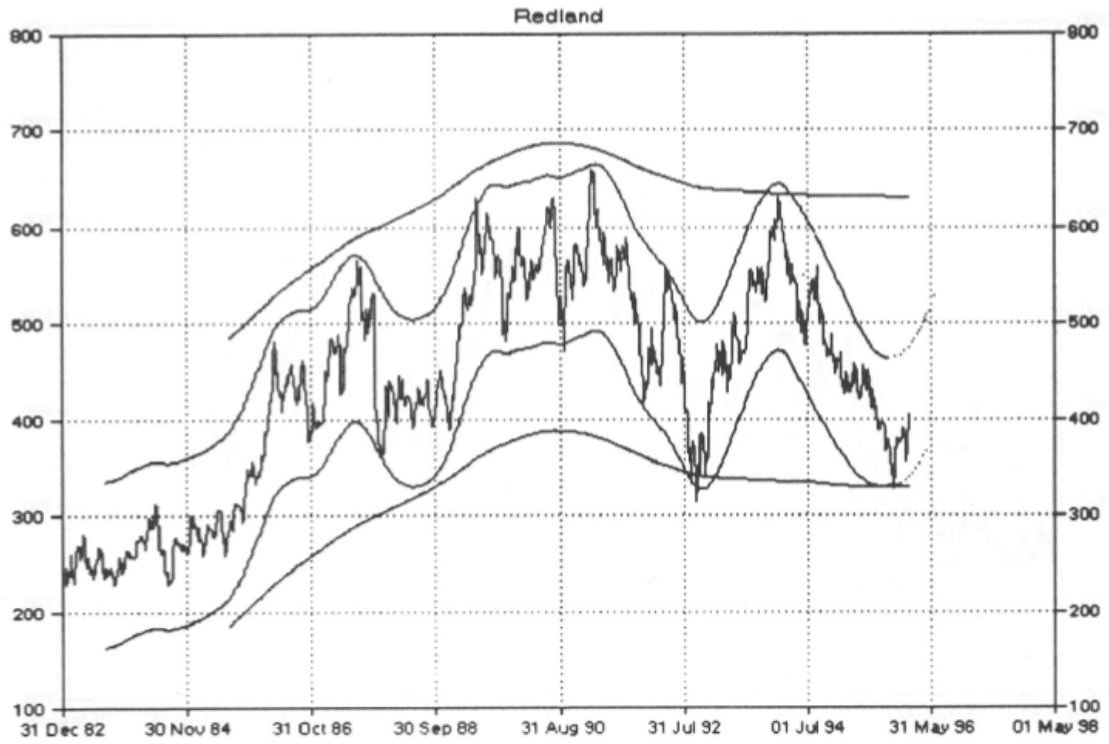
Figure 6.13 A channel drawn around the Redland share price movement as at 2nd February 1996



Since the price is rapidly approaching the upper boundary, the first deduction from this chart is that we expect the price to rebound downwards again, so that the investor should stay clear.

The date of 2nd February 1996 was deliberately chosen so as to be just after a channel turning point, when in fact the price started to rise. In order to deduce this from channel analysis it is essential to draw a longer-term channel in order to demonstrate that the first impression of a falling channel is inaccurate. This outer channel is shown in Figure 6.14. The critical points which determine its position are the series of major highs between 1989 and 1990, the major low in August 1992 and the most recent major low in November 1995.

Figure 6.14 Drawing another outer channel aids in the prediction of price movement by showing where the inner channel must reverse direction

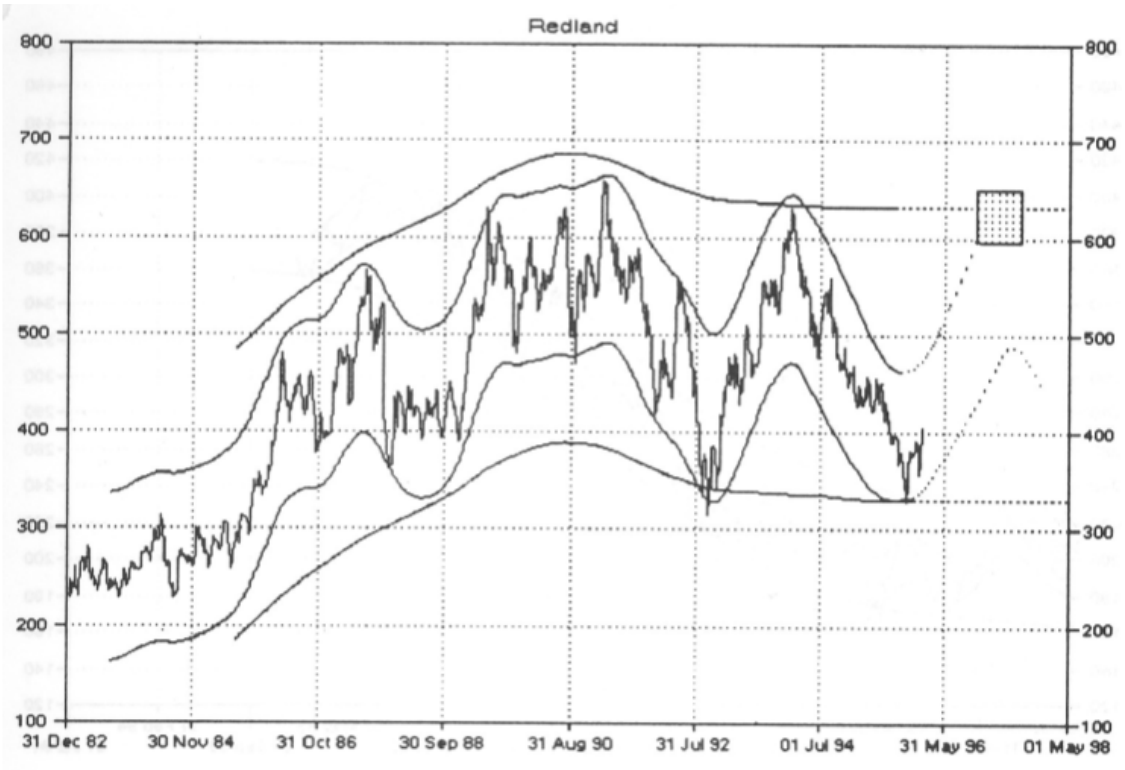


In order to keep a constant depth and avoid extreme rates of curvature in this outer channel, it has to be drawn so that it is virtually horizontal at the latest point in time, i.e. on 2nd February 1996. By the rules of channel

analysis, we cannot allow inner channels to cross an outer channel by more than a small amount. Thus we have to draw the inner channel so as to bounce upwards from the lower boundary of the outer channel. This puts a totally different complexion on the prediction of the future share price from that which followed the drawing of just one channel. We now interpret the current long-term trend as rising, and since the shorter-term channel containing the price movement is contained within it, the outlook is for a rise in the share price. If we conclude that the outer channel is likely to remain horizontal for some time, then we have a target area for the share price as being near the upper boundary of the outer channel, which will be at about 625p.

We note also that the inner channel has developed a much more obvious cyclicality than was present in the early part of the chart. This is important, because such cyclicality normally persists for at least one-and-a-half complete cycles, i.e. one-and-a-half wavelengths. By this is meant that the amplitude remains important for this length of time. It should be mentioned once again that the amplitude is subject to change over a period of time, and the wavelength will also change from its nominal value. More examples of this will be seen later.

Figure 6.15 Based on the wavelength of the inner channel cycle, a prediction box can be drawn around 22nd August 1997 as the target area for the future price rise



That the nominal wavelength is changing can be determined by looking at the latest succession of peaks and troughs, a wavelength being of course twice the distance between a trough and the following peak, or a peak and the following trough. The major low (313p) on 16th October 1992 was at week 511 from the beginning of the chart, the next high (630p) was on 28th January 1994 at week 578, and the latest low (328p) on 10th November 1995 at week 671. Thus on 28th January 1994 the wavelength of this important cycle was 2 x (578 - 511) = 134 weeks. On 10th November 1995 the wavelength was 2 x (671 - 578) = 186 weeks. We can see therefore that the wavelength is increasing. What cannot be determined is whether it has reached a maximum value and will start to decrease again, or whether it will continue to increase. Since we have two such possibilities, the easiest way forward for the moment is to assume that the wavelength will remain the same. This means that the next peak will be half a wavelength, i.e. 93 weeks, on from the last trough which was at week 671. This now gives us a rough idea of the most likely point in time when the price will arrive at the top of the channel. It will be on week 671 + 93, i.e. week 764. This corresponds to 22nd August 1997. Since we

know that the wavelength and amplitude are unlikely to remain the same, all we need to do now is to put a time window and price window on this prediction. This is our "prediction box" (Figure 6.15), and it is extremely useful as the target area into which we expect the price to move.

We can see that by comparing the method of moving average/cycle analysis and channel analysis, we get broadly similar conclusions for the progress of the Redland share price in the near future.

APPLYING CHANNEL ANALYSIS TO THE BUYING AND SELLING OF BAA SHARES

The power of channel analysis is fully illustrated by showing how an investor would have decided when to buy and sell BAA shares at various points over the last five years. Even using weekly data, a surprising insight into the behaviour of the share price will be obtained, and we shall start with this before moving to a discussion of the even better results that can be obtained using daily data. We can start the analysis by putting ourselves in the position of an investor monitoring the BAA share price from July 1993 onwards.

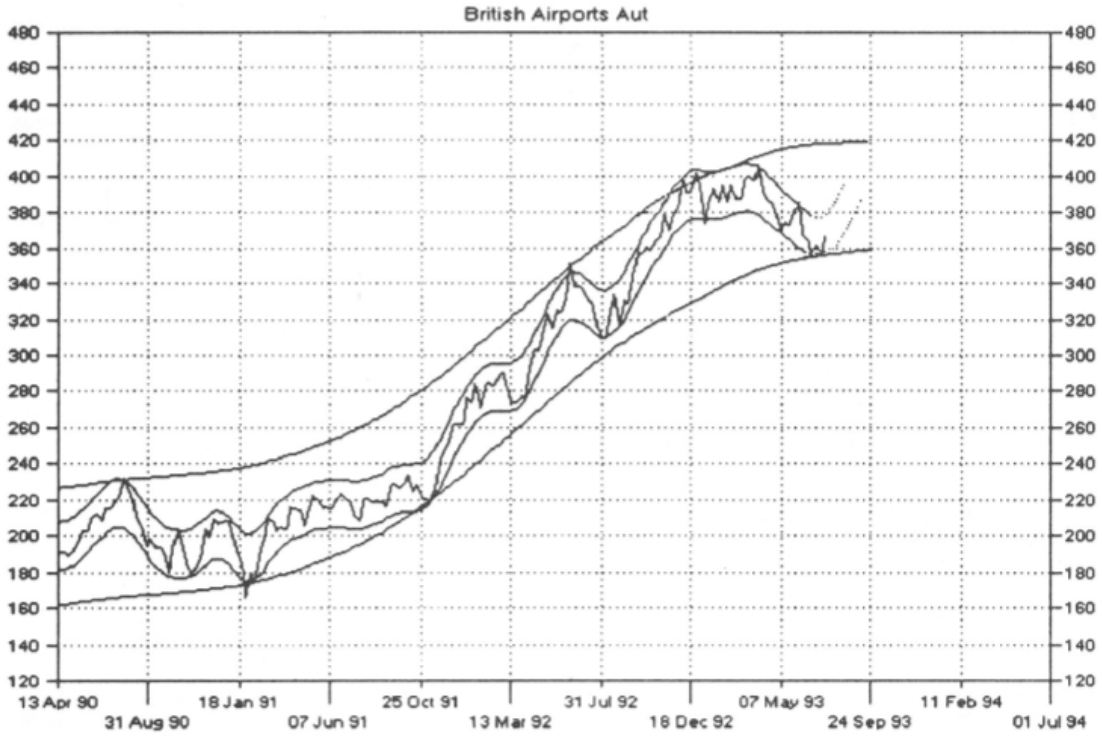
July 1993 (Figure 6.16)

The channels which could be drawn for the BAA share price data during July 1993 are shown in Figure 6.16. The peaks which partly define the upper boundary are those in July 1990, June 1992, December 1992 and March 1993. Since there are no major peaks in the share price between July 1990 and June 1992, it would not be possible to draw one obvious upper boundary but rather a series of curves of differing concavity when viewed from the top of the chart.

Fortunately, there are troughs which partly define the lower boundary in this empty region, and since the boundaries have to be at a constant vertical distance apart, the combination of upper peaks and lower troughs enables us to draw just one channel, as is shown in Figure 6.16.

When the more minor peaks and troughs are taken into account, and maintaining the constant depth criterion, an inner channel can also be drawn in a similar manner. In this case the inner channel touches the outer channel at the positions of the peaks and troughs which were used to define the outer channel. The depth of the outer channel is equivalent to about 65p on the price scale, while the inner channel has a depth of about 30p. On 7th May, the price, at 369.5p, is somewhere around the mid-point of the outer channel, and at the lower boundary of the inner channel, which is falling within the outer channel. We thus expect the price to bounce upwards from the lower boundary of the inner channel, but the price rise to be limited by the fact that this channel is falling. This is indeed what happened, since the price rose over the next few weeks to 382.5p by 4th June, before falling again to a low of 356.5p on 25th June. It rose the next week to 361.5p before falling back again to 356.5p on 9th July. It rose from this point to 365.5p on 16th July, thus confirming that the previous week was indeed a trough in the price. It is at this point that we are trying to decide on the future price movement of the share.

Figure 6.16 Channel analysis of the BAA share price in July 1993 from weekly data



Attention now turns to the outer channel. We are confident that it is running almost horizontally at this point by virtue of the fact that the group of peaks in December 1992 and March 1993 are at a similar level. The price at 356.5p is just about at the lower boundary, but we can also deduce that the falling inner channel has now reached its lowest point because the two troughs on 25th June and 9th July are at the same level, and these almost certainly lie on the boundary.

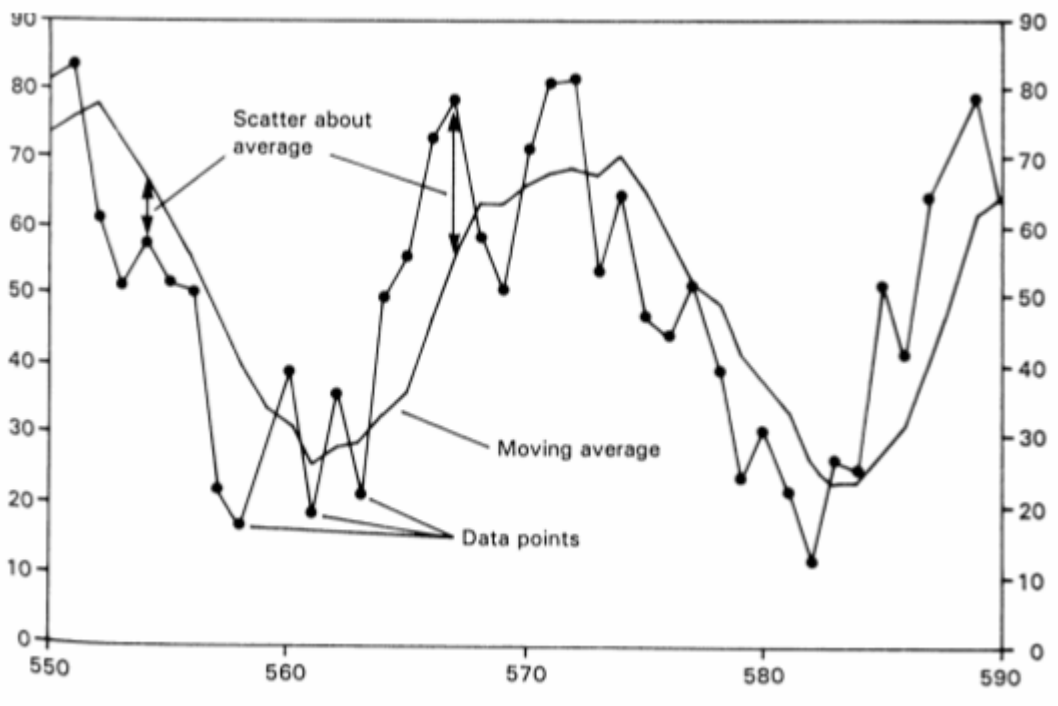
Taking the position that the outer channel is running horizontally, the inner channel has stopped falling and the share price itself is at both of these lower boundaries, then the share now appears to be a good buy at 365.5p.

That this decision was correct is confirmed by the subsequent rise in price to 535.5p by 7th September 1993. Thus a rise of 170p, or 46%, was captured by using the logic of channel analysis.

February 1994 (Figure 6.17)

By this point in time, the inner channel is clearly rising, and the outer channel, which was horizontal in the previous example, is now rising again. We are at the point where the inner channel is at, or very close to, the most likely position of the upper boundary of the outer channel. Thus we expect the inner channel to bounce back again, and this extrapolated future course for the inner channel has been drawn in Figure 6.17.

Figure 6.17 Channel analysis of the BAA share price in February 1994 from weekly data

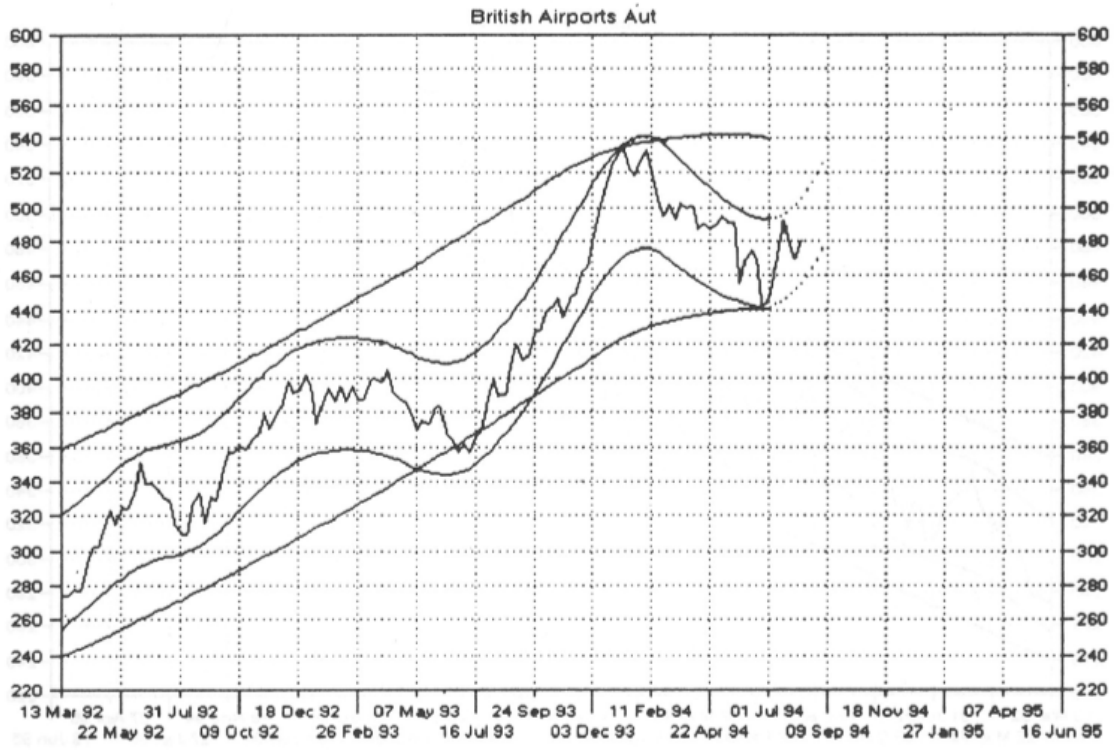


In such a position, the price movement has to be watched very carefully. Just as in the previous example a succession of two troughs at just about the same level indicated that the inner channel had stopped falling, then so does the succession of two peaks where the second is at the same or a lower level than the first indicate that the inner channel has stopped rising. In the present case, the peak at 535.5p on 7th January was followed by a fall to 522.5p and then eventually a rise to 532.5p on 4th February. It was not until the following week when the price fell to 519p that the price the previous week was seen to be a peak.

Thus on 11th February we are in a position to take a decision. The failure of the second peak to rise above the first one indicates quite strongly that the inner channel has topped out and has just started on its way down. Thus the share has to be sold at this value of 519p. As a result, the real gain from the investment made on 16th July at 365.5p is 153.5p, or 42% in about six months.

July/August 1994 (Figure 6.18)

Figure 6.18 Channel analysis of the BAA share price in July 1994 from weekly data



By May 1994, the outer channel still appears to be rising, but the fall in price to 455p by 25th May would mean that the lower boundary is being penetrated. In order to avoid this the channel will have to be made to gradually flatten out from the point where the peak in January 1994 is at the upper boundary. This is shown in Figure 6.18. The price rises from 455p over the next two weeks to 475p, but then drops again. As the price drops to a new low point at 441p on 24th June, the channel has to be bent even further to accommodate this point as being on the boundary. We are hoping for a rise so that this point at 441p becomes a trough lying on the lower boundary. This trough is indeed formed by the rise the following week to 446p. We are now in the situation where the outer channel has virtually topped out, and is running horizontally, and the price has risen from a trough which is exactly on the boundary. This estimated position of the outer channel imposes a bounce on the inner channel. Thus all depends upon our estimation of the outer channel. If it is correct, then the bounce in the inner channel will take the price up with it towards the upper boundary of the outer channel. We now need to wait for the next minor trough to be formed at a higher level than 441p in order to confirm that short-term trends have now turned up and will take the price upwards. If the next

trough is lower than 441p, then we will be forced to bend the outer channel again to accommodate it. The bend required would thus cause the outer channel to fall.

Obviously the best time for investment is when the outer channel is rising, but profits can also be made when a channel is flattening out. The time to avoid investment is when the outer channel is falling, since by the time the price reaches the upper boundary it may well be at a lower level than when it started. These comparisons are shown at the end of this chapter. In the present case, therefore, if the next trough is lower than 441p then we would leave the share alone.

The price rose for the next four weeks to 488p before falling back to 476.5p and then rising again. Thus, indeed, the trough now formed is considerably higher than the previous one at 441p, so that we can be sure that the share price is in a short-term upward trend. The trouble is that when the outer channel is running horizontally, the upper boundary is at about 540p. Thus from the current level of 480p in August 1994 we have a somewhat restricted potential for gain of only about 12.5%. In such a case it would be unwise to make an investment.

The analysis of the position in August 1994 has been extremely useful. If the second trough had been formed quickly after the first one at 441p, and at a level only slightly higher, then the investment would have had a greater profit potential. As it is, the fact that the trough was formed 35p higher removed much of the potential profit, making it unattractive. As we shall see in the next section, using daily data will often clarify the position in such cases.

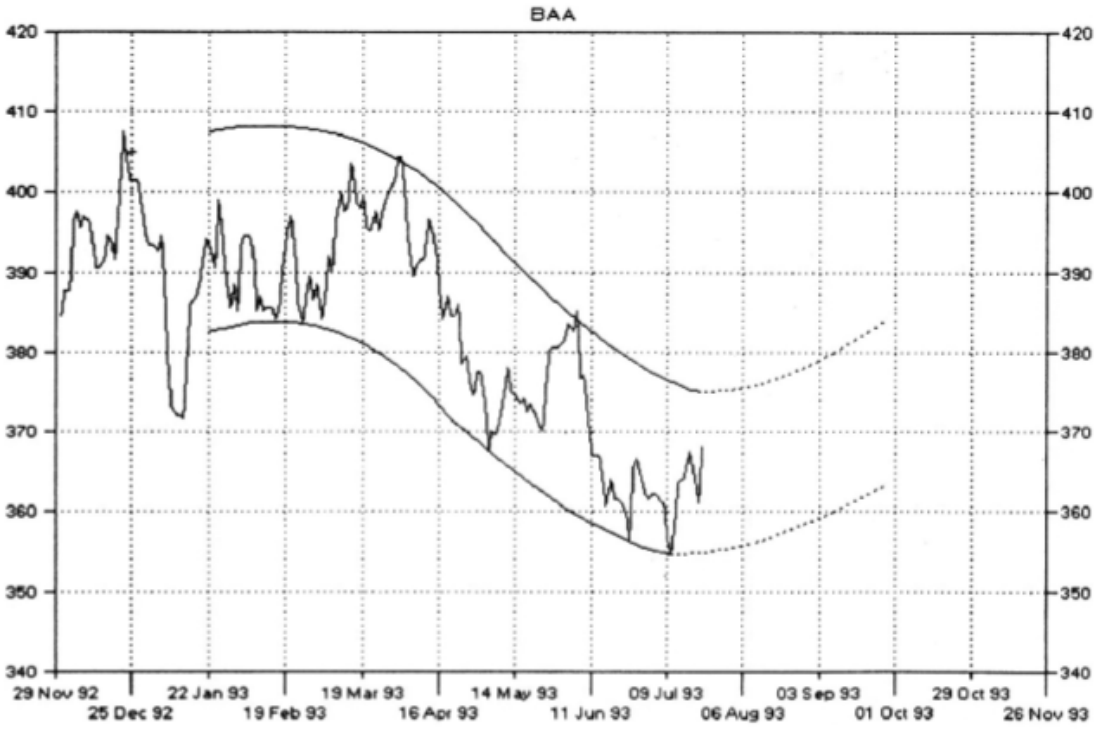
THE ADVANTAGE OF DAILY DATA

These excellent results using weekly closing prices would satisfy most investors, but it should be obvious that even better results will be obtained using daily data. This is because lower prices may be reached before the end of a week, giving a better buying opportunity. The same argument applies to selling where a better price might be achieved. Not only that, but warning signals that the price is about to reverse will be much more accurate, so that trouble can be avoided much sooner.

July 1993 (Figure 6.19)

The daily data for BAA from the high point in March 1993 to July 1993 are shown in Figure 6.19. In the earlier discussion of the channels which could be drawn using weekly data we came to the conclusion that the outer channel was running horizontally because of the fact that the groups of peaks in December 1992 and March 1993 were at a similar level. The daily chart shows that the peak in December 1992 was higher than the set of peaks in March 1993. From this we can conclude that the outer channel has turned slightly downwards, but not at such a rate as to negate the possibility of an investment when the price reaches the lower boundary.

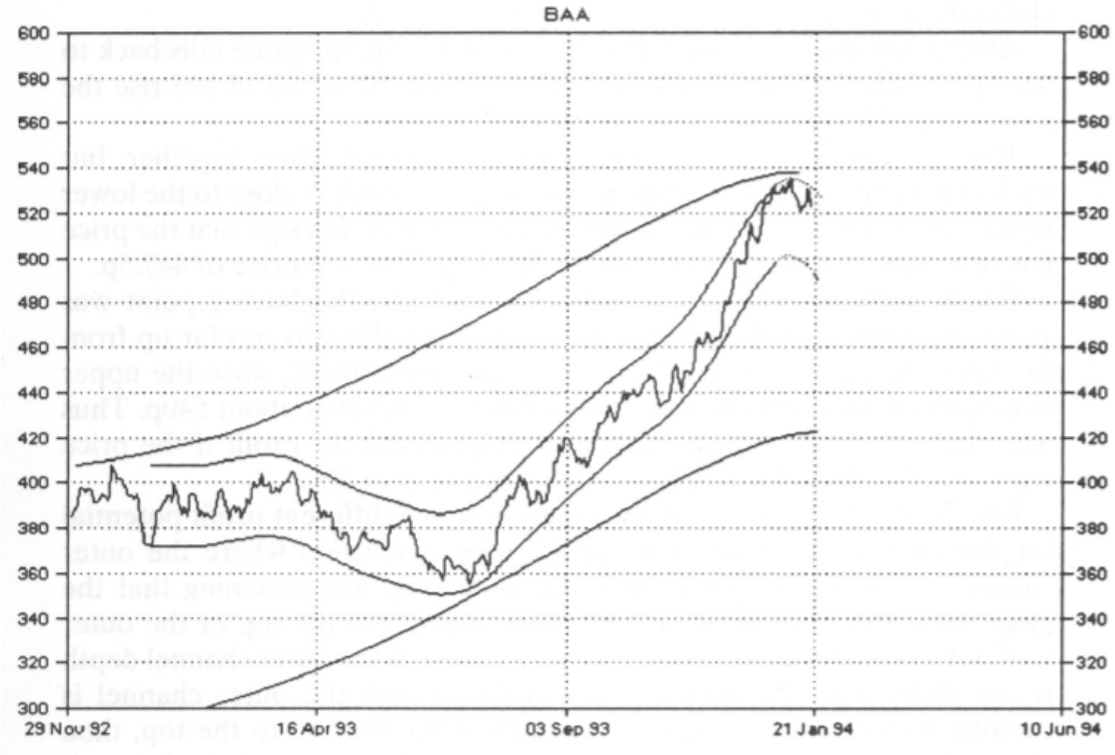
Figure 6.19 Channel analysis of the BAA share price in July 1993 from daily data



As far as the inner channel is concerned, the first major trough, at 356.5p on 25th June, lies on the lower boundary. However, the next trough at 354.5p on 12th July is at a higher level than would be the case with the slope of the inner channel being maintained. We can conclude that the inner channel may be about to change direction, especially as it is rapidly approaching the extrapolated position of the lower boundary. We now have to wait for the next trough to be formed, which we hope will lie at a higher level than 354.5p in order to confirm the change of direction. After rising from 354.5p for seven days, the price falls to 361p, and then rises the next day to 368p. We now have our trough, and it is indeed at a higher level than the previous one, thereby confirming that the inner channel has changed direction by bouncing off the lower outer boundary. Thus the share is now at a buying point at 368p. This has to be compared with the buying point of 365.5p which was deduced from the weekly data. Although we are having to pay a slightly higher price, we have much more confidence in the future price direction because of the fact that we have seen three troughs in the daily price which define quite clearly the fact that the lower boundary in the inner channel has changed direction.

January 1994 (Figure 6.20)

Figure 6.20 Channel analysis of the BAA share price in January 1994 from daily data



At this point in time, just as was the case with weekly data, we can see that the inner channel is clearly rising, and the outer channel, which was horizontal in the previous example, is now rising again. The inner channel is at, or very close to, the most likely position of the upper boundary of the outer channel and therefore expected to bounce down again.

The price reaches the top of the inner channel on 29th December 1993 at 532p. After falling back slightly, the price arrived again at 532p in early January, fell back again and then reached 535.5p before falling slightly again. This failure of the minor peaks to rise much beyond 530p is a sign that the short-term trends have run out of steam, and that we are probably at the high point for the time being, The confirmation of this will come if the next peak is at a lower level than 535.5p. This next peak is formed by the price rising to 530p on 18th January from a low of 520.5p and then

falling back to 528p on 19th January. We can now be confident that the price will not go higher, and can sell at this point.

Taking the previous buying decision into account, we have seen a rise from 368p to 528p for a gain of 43%. This is a few percent better than was obtained using weekly data for the channels, but has occurred over a period of time one month less than was the case with weekly data, giving a much better weekly return.

July/August 1994 (Figure 6.21)

With the formation of the trough in the share price of 441p on 24th June 1994, the price is at the lower boundary of the inner channel which is still falling at the same slope as a few weeks earlier. The next trough to be formed after this was at 441.5p on 28th June. That this trough was not lower than the previous one is an encouraging sign that the inner channel may be reaching its lowest point for the time being. As in previous cases, we are waiting for a further trough to be formed to see if it is at a higher level than the previous one, which can then be taken as a positive sign of channel reversal.

After a few days of rising from the low of 441.5p, the price falls back to 444.5p on 4th July 1994. This becomes a trough by virtue of the rise the next day to 447.5p.

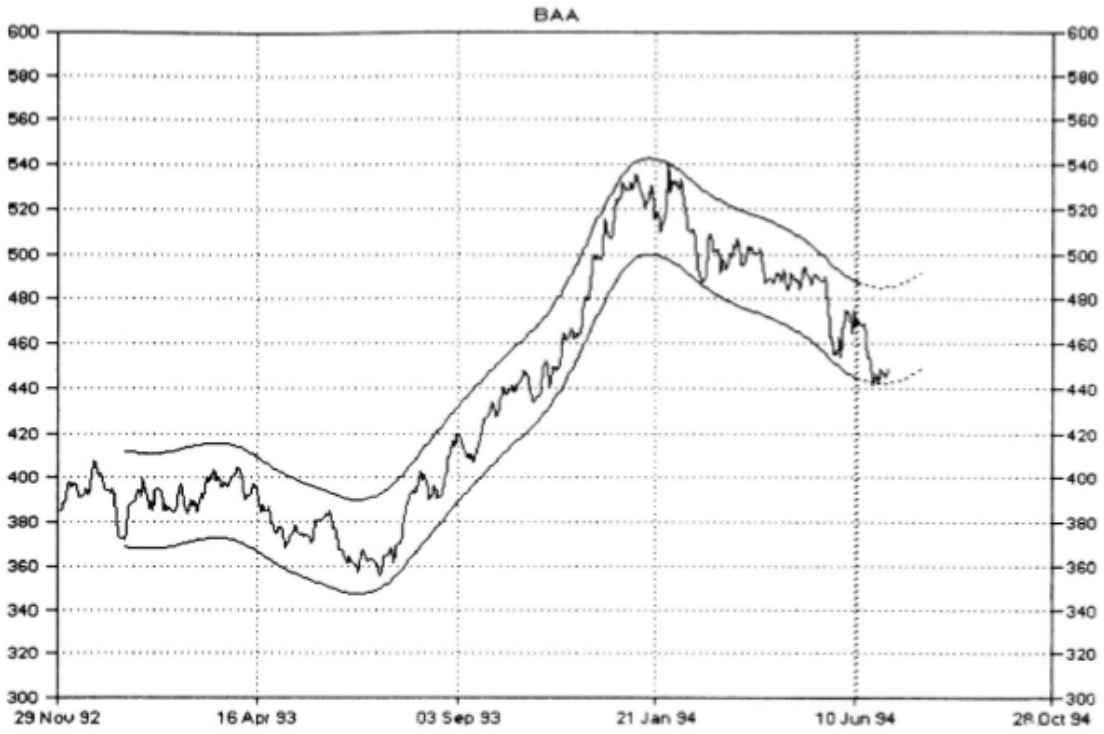
Thus we have seen a succession of three troughs, close together, but each at a higher level, at a point in time when the price is close to the lower boundary of the outer channel. This has to be taken as a sign that the price has reversed, and we can now buy on 5th July 1994 at a price of 447.5p.

When weekly data were used for the analysis, the buying point was given at a price of 480p, and we considered that this was too far up from the lower boundary to be other than a risky investment, since the upper boundary of the outer channel was running at a level of about 540p. Thus with daily data, we have a much greater potential for profit if the price rises to 540p, since this would give us a gain of over 20%.

Finally, it is necessary to draw attention to the different profit potential for the circumstances when a buying point is reached where the outer channel is rising, running horizontally or falling, and assuming that the price rises from the bottom of the outer channel to the top of the outer channel over the course of time. If we assume that the outer channel depth is say 100p, then the simplest case is that where the outer channel is running horizontally. If the price rises from the bottom to the top, then obviously the rise in price will be 100p over whatever period of time it takes to cross the channel.

If the outer channel is rising, then as well as this rise of 100p, we have to add the amount by which the outer channel has risen from the point where the price rises from its lower boundary to the point where the price reaches the upper boundary. Obviously, the steeper the slope in the outer channel, the greater will be the rise in share price, while the longer the price takes to make its rise, the further will the outer channel have risen during this period. Such cases are the optimum for investment.

Figure 6.21 Channel analysis of the BAA share price in Juy 1994 from daily data



On the other hand, when the outer channel is falling, we have to deduct from the rise of 100p due to the channel depth the amount by which the outer channel has fallen by the time the price reaches the upper boundary. In bad cases where either the channel is falling steeply or the price is taking its time to move, the price at the upper boundary may well be less than it was earlier at the lower boundary. Thus the investor should never invest if the outer channel is seen to be falling. It is acceptable to invest when the channel is running horizontally, provided the investor watches the price constantly and exits at the first sign of danger.

Chapter 7. The Relationship between Moving Averages and Channels

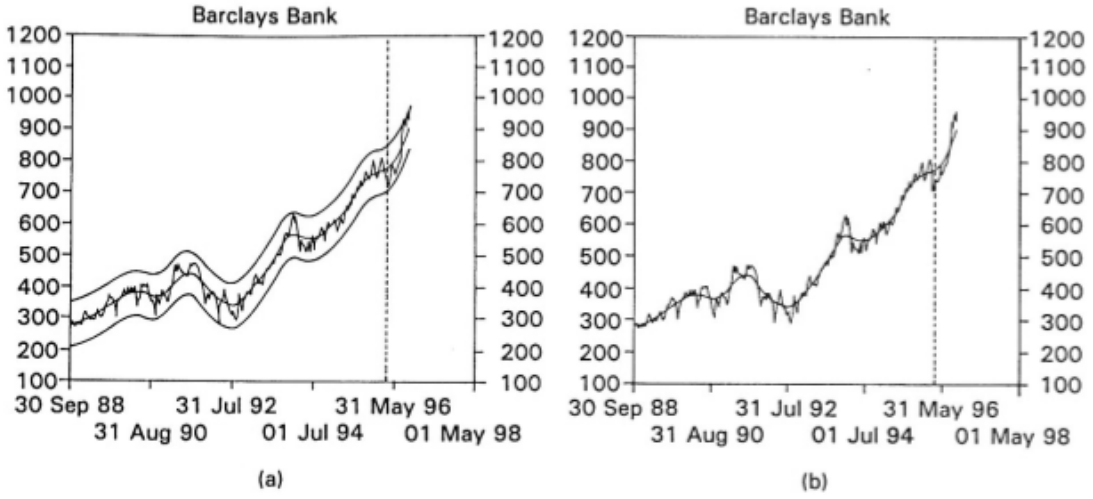
AVERAGES AS TEMPLATES FOR CHANNELS

Although in the last chapter we treated moving averages and channel analysis as quite different techniques which lead to broadly similar results for the prediction of share price movement, they are fundamentally the same. Moving averages are mathematical quantities which are calculated from original data and serve to remove fluctuations of increasing periodicity as the span of the average increases. The drawing of channels so as to enclose the share price data is the result of an averaging process carried out by the interplay between the eye and the brain. The channel which encloses the most minor fluctuations represents the movement caused by fluctuations of longer periodicity than those within the channel. Therefore this channel which is being drawn is removing the same fluctuations as an average of appropriate span, i.e. of similar span to the periodicity of the fluctuations which are being removed. The drawing of outer channels so as to enclose the peaks and troughs in the previously drawn channel can be continued until there are not enough peaks and troughs left in the outermost channels to be able to draw a final enclosing channel with any accuracy. We should see now that each successive outer channel is performing the function of a moving average of an appropriate span.

The relationship between channels and averages becomes more apparent if a centre line is drawn through a channel. This centre line now represents the combined effect of all the cycles of longer periodicity than those contained by the channel. Since we have now produced a line rather than a channel, we now have something which can be directly compared with a moving average line. It should now be obvious that it is only a matter of selecting the correct span for an average so that it allows through all those periodicities which are represented by the centre line of the channel. By

this process, and of course allowing for human inaccuracy in drawing channels, we should arrive at almost identical lines. This is illustrated in Figure 7.1(a) and (b).

Figure 7.1 (a) Freehand channel with centre line added. (b) Calculated moving average showing similarity to channel centre line

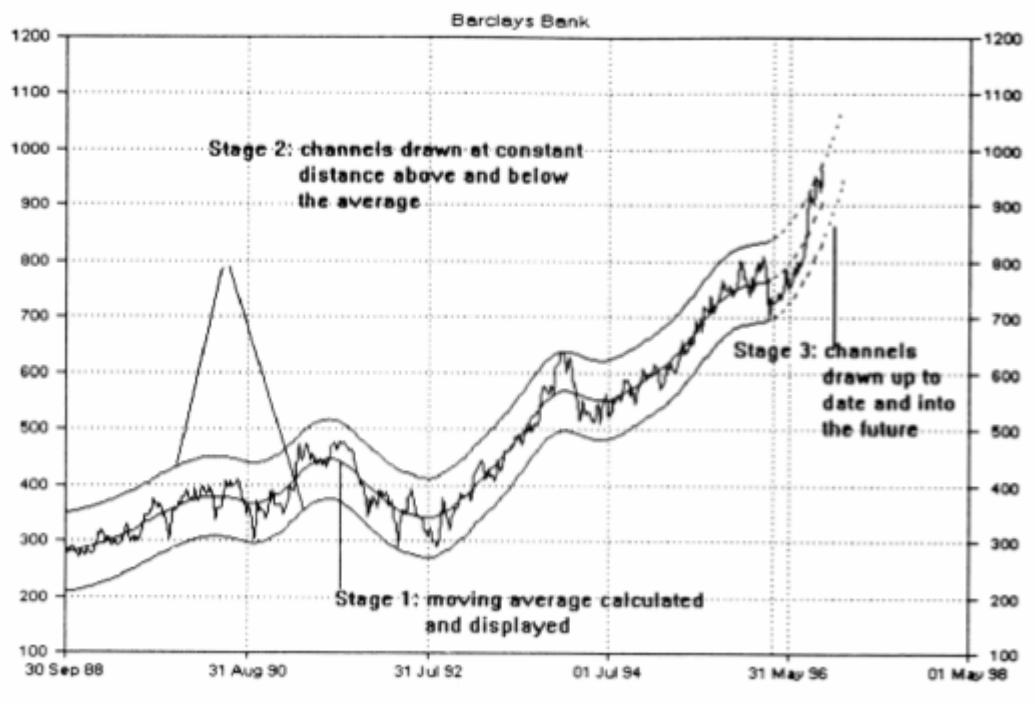


We can now see that the computation and plotting of a moving average gives us a good starting point for drawing a channel. No longer are we faced with a sheet of paper which is blank except for the share price movements – we already have in place a template for the channel. Since the prime requirement for a channel is that the depth is kept constant and that most of the fluctuations of the data are contained within the upper and lower boundaries, it is now a simple task to draw these boundaries so that they fulfil these two requirements exactly. Each boundary has to be exactly the same vertical distance above or below the average line at each point.

Having done this, we are faced with a slight difference between the channel which we have produced from a moving average and the channel we have drawn freehand. In the latter case we would draw the channel as far in time as the last data point, and then proceed to project it into the future. An average terminates half a span back in time, and so we still have to apply some freehand drawing to bring it up to the time position of the

last data point, and more freehand drawing to project it into the future. The stages in this process are shown in Figure 7.2.

Figure 7.2 The stages in producing channels by calculation. The moving average calculated and displayed and the channels drawn at a constant distance above and below the average. They are then extrapolated to the time of the latest data point and on into the future



This is an important fact – even by calculating channels directly from the data by using a calculator or computer, we cannot avoid a freehand extrapolation into the future. Even the most sophisticated computer program would be faced with this problem – extensive curve-fitting procedures which will extrapolate the channels into the future cannot be more than a "best guess" process, and certainly cannot predict the unpredictable, i.e. the random movement associated with share price data. To all intents and purposes, a freehand extrapolation of a channel into the future is as good as any computer prediction. Where the computer scores is in the accuracy of the channels it can produce over the time period of the historical data but excluding any lag forced on the calculation by the span of the particular average involved.

COMPUTING CHANNEL DEPTHS

Now that the computer or calculator is giving us a great deal of help in deriving the shape of the various channels in which we are interested, it is natural to wish to see if we can also get help with calculating the depths of the channels. If that turns out to be the case, we will have a very rapid method of drawing channels accurately up to the time at which the average terminates. The answer is that we can calculate these depths, although rather more extensive calculations are required. For this reason it is not recommended that the investor attempts these calculations unless he has a computer or a programmable calculator. The calculation is based on a consideration of the scatter of the actual data points around the plotted moving average. A quantity called the "standard deviation" is a measurement of this scatter, and from this we can work out where to place the channels so as to contain whichever proportion of the data movement that we wish.

To be able to calculate the standard deviation of the points around the moving average line, we first of all have to tabulate the distance of each point from the moving average with which it is associated, i.e. with the average placed half a span back in time, as we have been doing throughout this book. Fortunately, those investors who have been taking note of the value of moving average differences for determining short-term cycles in the data have already done this! The values which we use to calculate the standard deviation are simply the moving average differences, and we showed exactly how to derive these in Table 4.2 in Chapter 4.

The arithmetic is now tedious, since we have to calculate another column of values. These are simply the square of each moving average difference. To do this, we can present Table 4.2 again with this additional column added, as shown in Table 7.1.

Finally, it is not the individual values of moving average difference or the square of a moving average difference that we require, but the total of each of these. We therefore have to add together all the values in the column headed "Average difference", and add together all the values in the column

headed “Square”. Note that we must take into account the sign of the values in the moving average difference column, so that we add or subtract the next number to the running total as we move down the column. In the squares column all the numbers are positive. At the end of this exercise we have two totals, one of which, the sum of the squares, should be quite large. The final value that we need in order to calculate the standard deviation is the *number* of items which we have added together to produce these two totals, i.e. the number of moving average difference values which we used, in this case 19.

We can now calculate a quantity called the variance:

variance = (S(Y2) - S2(Y)/N)/(N-1)

where S stands for “sum of”. The standard deviation is simply the square root of this number:

standard deviation = SQR(variance)

The quantity S2(*Y*) is the square of the sum of the average differences. The quantity S(Y^2) is the sum of the squares of the individual average differences. N is the number of moving average differences which were added together.

Table 7.1 Calculation of five-week standard deviation. The data are represented as in Table 4.2, and the square of each average difference placed in the final column

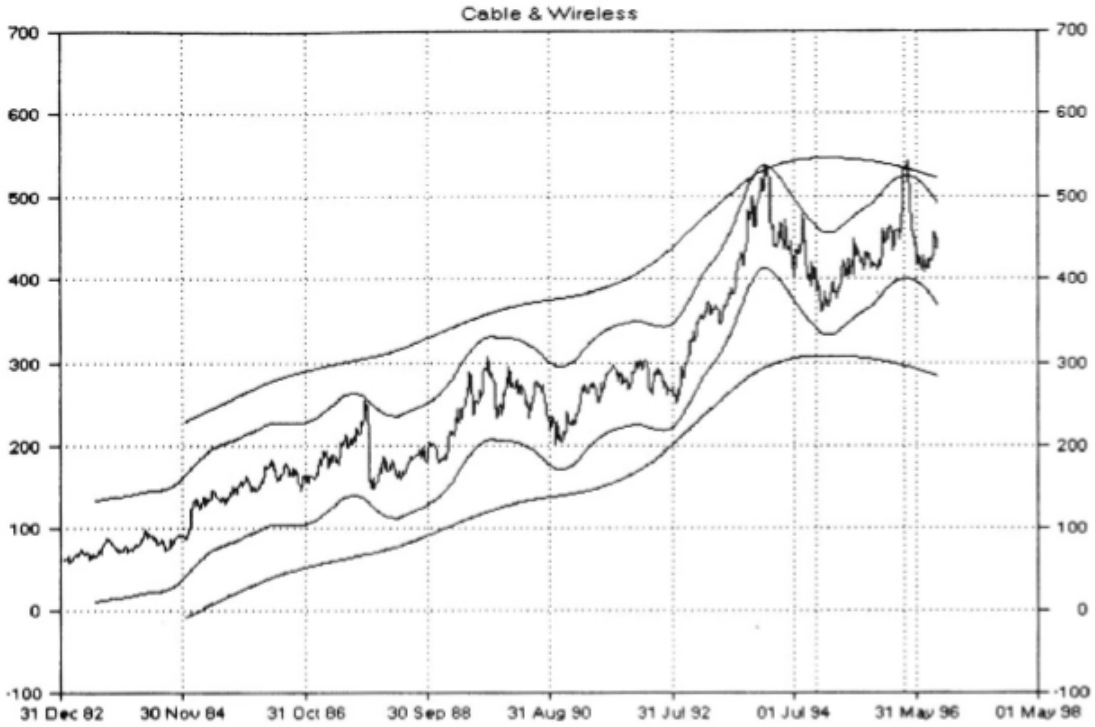
Value	Subtract	Five-week total	Five-week average	Aligned average	Average difference	Square
49	x					
17	x					
18	x			33.4		
23	x			35.8		
60	x	167	33.4	42.4	17.6	309.76
61	x	179	35.8	48.6	12.4	153.76
50	x	212	42.4	56.2	-6.2	38.44
49	x	243	48.6	57.0	-8.0	64.0
61	x	281	56.2	59.0	2.0	4.0
64	x	285	57.0	65.4	-1.4	1.96
71	x	295	59.0	65.6	5.4	29.16
82	x	327	65.4	67.2	14.8	219.04
50	x	328	65.6	69.6	-19.6	384.16
69	x	336	67.2	64.0	5.0	25.0
76	x	348	69.6	54.0	22.0	484.0
43	x	320	64.0	53.6	-10.6	112.36
32	x	270	54.0	47.8	-15.8	249.64
48	x	268	53.6	38.6	9.4	88.36
40	x	239	47.8	36.0	4.0	16.0
30	x	193	38.6	32.8	-2.8	7.84
30		180	36.0	30.8	-0.8	0.64
16		164	32.8	32.8	-16.8	282.24
38		154	30.8	34.0	4.0	16.0
50		164	32.8			
36		170	34.0			
Totals					**14.6**	**2486.36**

Taking the values in Table 7.1, we get the sum of the average differences of the 19 values, i.e. S(Y) = 14.6, therefore S2(Y)/N = 14.62/19 = 213.16/19 = 11.219. The sum of the squares, i.e. S(Y2), is 2486.36. From this the variance is 137.5 and so the square root of this is the standard deviation, 11.7. The channel depth which we can calculate from this value of standard deviation depends upon what percentage of the data points we wish to enclose within the channel. It is a mathematical fact that about 68% of the points will lie within the channel which is drawn one standard deviation above and below the moving average, 95.5% will lie within a

channel two standard deviations above and below the average, and 99.7% will lie within a channel three standard deviations above and below the average. The last value is overkill, because only three points in 1000 will lie outside the channel, and we have frequently said that it is permissible to have a small number of points penetrating the channel. For this reason, two standard deviations above and below the average will be perfectly satisfactory. For the data in Table 7.1, therefore, the channel depth which will accommodate 95.5% of the movement is 46.8, i.e. 23.4 (two standard deviations) above and below the average itself.

What we have outlined here is a method of calculating and plotting the channels accurately, and the result of doing this is shown by the plot in Figure 7.3 produced by the Microvest 5.0 program.

Figure 7.3 Channels produced automatically by the Microvest 5.0 program

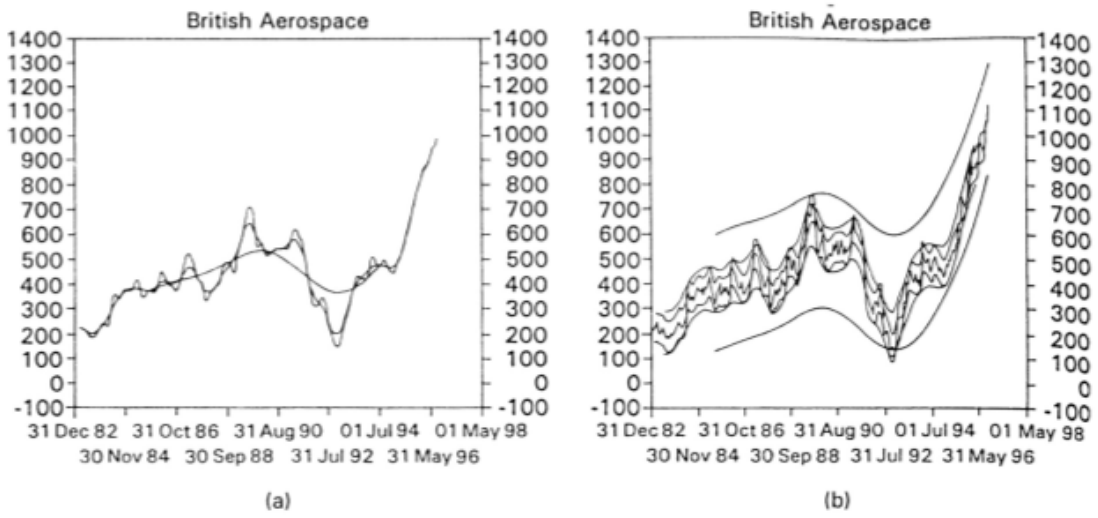


MULTIPLE AVERAGES

When a number of cycles of different wavelength are present at the same time in a share price movement, then the troughs and peaks occur at different times. There will be occasions when the troughs or peaks of a number of different cycles happen to coincide, and these occasions are major decision points. The subsequent movement of the share price will be exaggerated, since for a short period of time all of these cycles will be acting in concert, i.e. the amplitudes of the cycles will be additive.

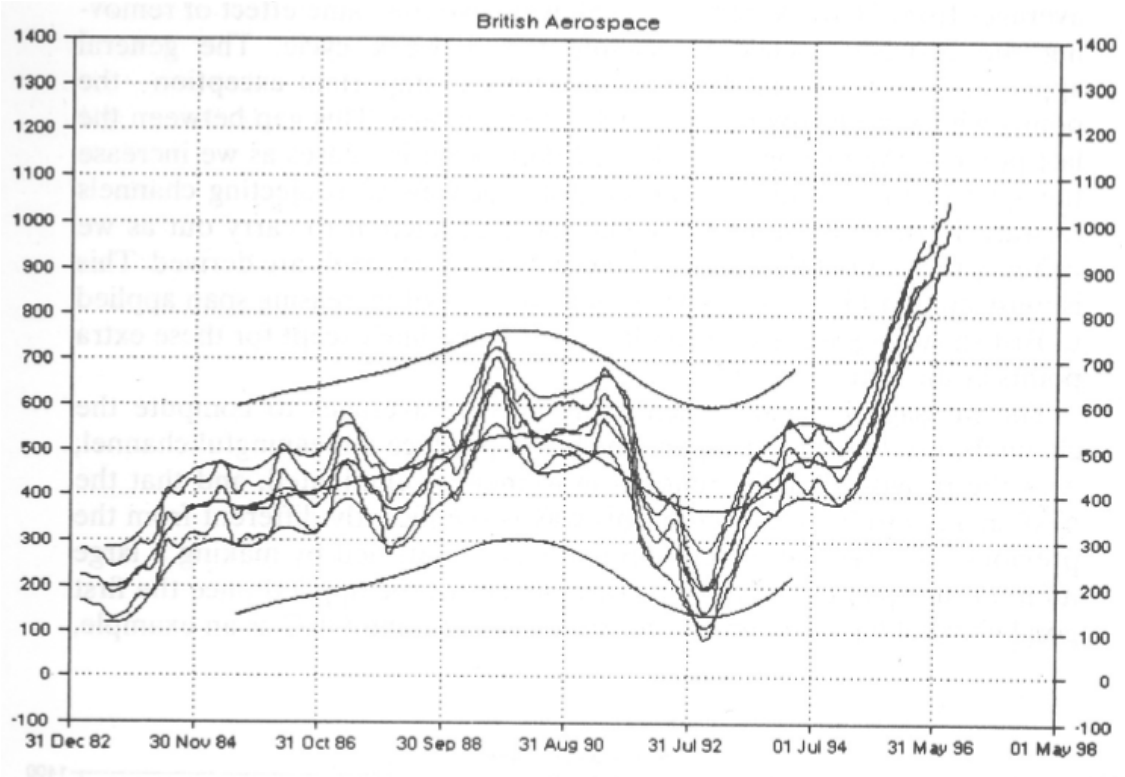
When a number of moving averages of increasing span is calculated and displayed, the presence of a number of cycles whose peaks and troughs are occurring at mostly different times will appear to give a jumble of such moving average lines. A closer inspection will show that they are not quite as jumbled up as first appears. With a computer that plots averages as different coloured lines, it might be slightly easier to see than with a monochrome display or a chart on paper, but each moving average oscillates about the next higher span average. Because of this oscillation, it is possible with practice to extract the relationships between the moving averages and hence the relationships between the cycles which they represent, but this is not easy. This is one area in which channel analysis scores heavily, because almost the same information about cycles is being presented, but in a form in which the relationships jump out at you. This is illustrated by the comparison between parts (a) and (b) of Figure 7.4.

Figure 7.4 (a) Multiple averages do not convey information readily. (b) Channel analysis shows the same information in a way in which relationships are instantly visible



It is the depth allocated to channels which is the single most important fact that brings meaning to the data. Note that we can take a presentation such as that in Figure 7.4(b) and achieve the same somewhat confusing oscillation of the cycles by drawing a centre line down each channel. This is shown in Figure 7.5.

Figure 7.5 The centre lines drawn through each channel are virtually identical with the moving averages shown in Figure 7.4(a), and are equally difficult to analyse

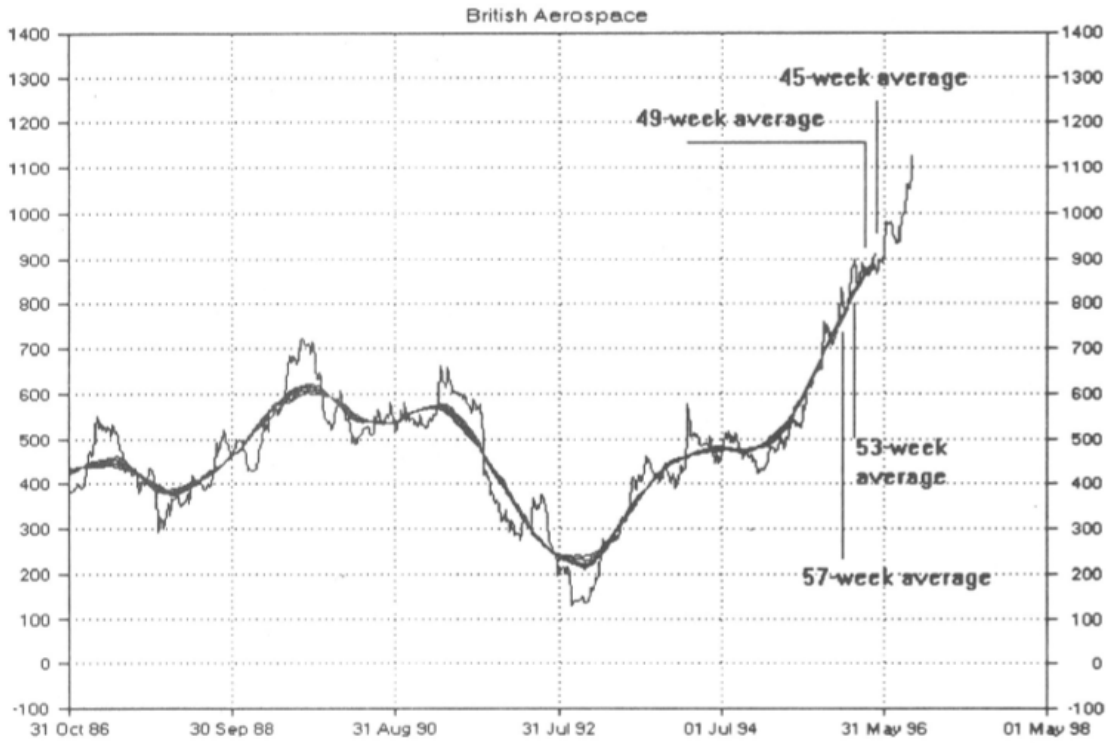


This reverse approach then highlights an aspect of oscillating moving averages that might not otherwise be apparent. The constant depth requirement means that an inner channel when oscillating within the next outer channel should at its extreme movements reach points which are an equal distance above and below the centre line of the channel. Converting this behaviour into the behaviour of averages means that the extremities of the oscillation of an average about a longer span average should be more or less equal. Thus the oscillations of the averages have a symmetry that might not be obvious at first glance at Figure 7.4(a).

The cycles present in share price data are normally well spaced in terms of wavelength. It would be most unusual to have cycles of say 20 weeks and 25 weeks present at the same time. If such a pair of cycles do appear to be present, they probably represent the same cycle which has changed its wavelength slightly in accordance with the variation discussed in the last chapter.

Because of this spacing of wavelengths, the number of averages we need to apply is quite limited. What we will find is that the appearance of a number of plotted moving averages is very similar.

Figure 7.6 If the cycles in share price data are widely separated, many moving averages will appear identical except for the increasing loss of points at either end as the span of the average increases

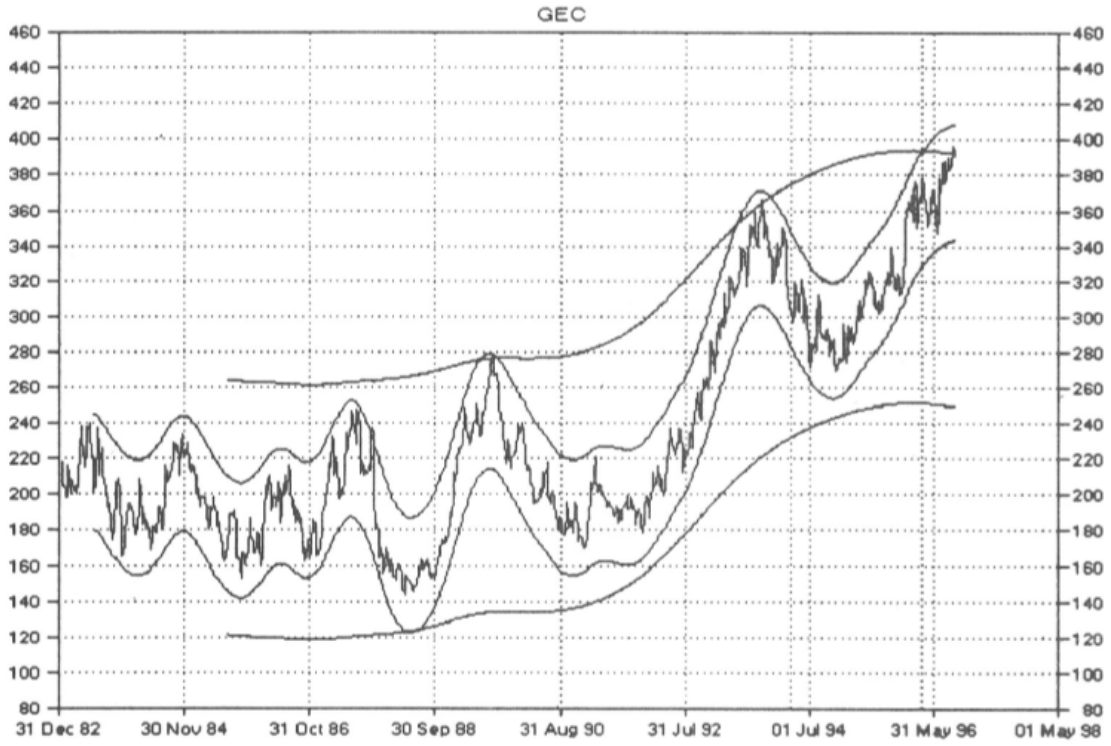


This happens because, of course, a moving average allows through wavelengths greater than the span of that particular average. If a particular cycle is much longer in wavelength than the average which we have chosen, and there is no other cycle whose wavelength lies between these two values, then we can apply all of the possible averages between this initial value and the wavelength of the cycle with essentially the same result. As an example, suppose we have two cycles of 21-week and 51-week periodicity and no other cycle lying between these two values. We can apply a 21-week average to remove the 21-week cycle and display just the 51-week cycle plus any others of wavelength greater than 51 weeks. All averages from 21-week up to 49-week will have this same

effect of removing the 21-week cycle and leaving the 51-week cycle. The general appearance of the result is the same with one important exception – the points which are missing at the end of the average. This gap between the last point of the average and the last data point increases as we increase the span of the average. From the point of view of projecting channels forward in time, we have more and more prediction to carry out as we increase the span of the average from which the channels are derived. This is illustrated in Figure 7.6, where four averages of increasing span applied to British Aerospace data give almost the same line except for these extra points at the end.

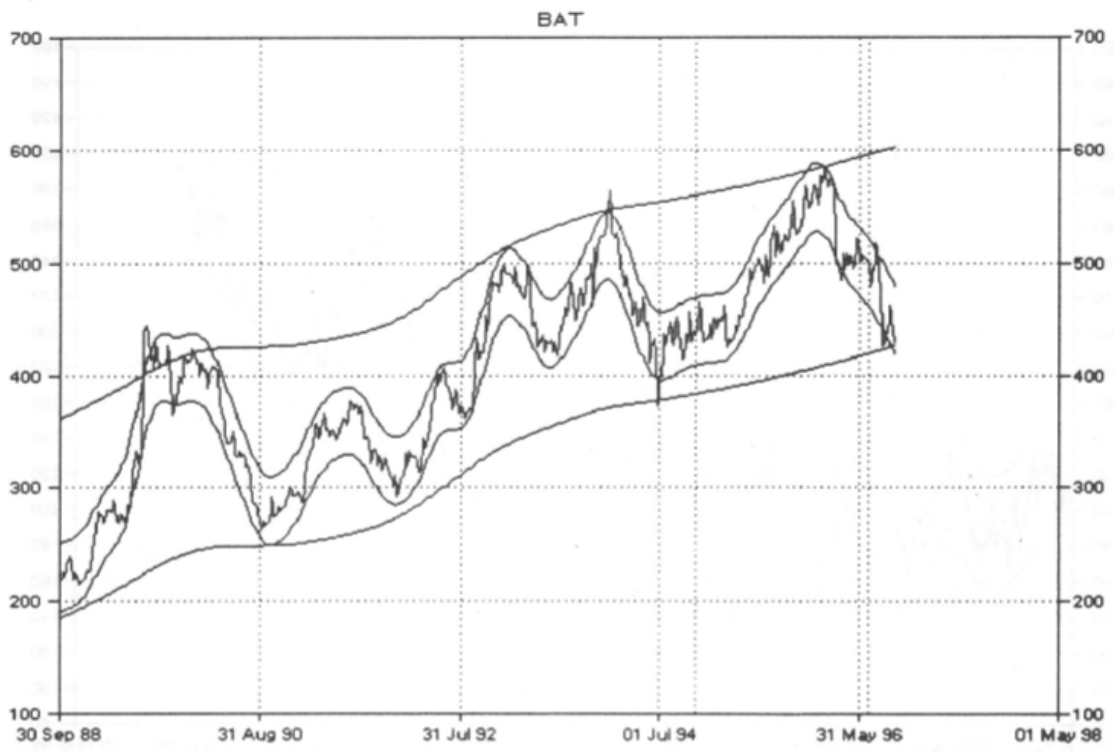
The message is clear – when using moving averages to compute the channels, use the shortest span which will produce a meaningful channel, with the proviso that the random movement is eliminated, and that the next channel to be produced in this way is significantly different from the previous one. This latter requirement can be satisfied by making a large jump in the span of the next average which will be applied once the first good channel has been produced. In practice, taking GEC as an example, the spacing of averages which would produce good channels would be 53 and 265 weeks, and the results of using these values are shown in Figure 7.7. An average with a shorter span than 53 weeks is not used in this case because of the absence of significant cycles of wavelength much less than one year.

Figure 7.7 The channels produced for the GEC share price by using averages of one year (53 weeks) and five years (261 weeks) with the Microvest 5.0 program



Other values will be necessary for other shares, but this example gives an idea of the fairly wide spacing that will have to be used. Where there are cycles of significant amplitude with shorter wavelengths, then an average of shorter span such as 27 weeks may be used. This is shown in Figure 7.8 for BAT, with 27-week and 209-week averages being used.

Figure 7.8 The channels produed for the BAT share price by using averages of 27 weeks and 209 weeks with the Microvest 5.0 program



Figures 7.7 and 7.8 illustrate the considerable help in channel analysis which is available when we have the computational facilities to calculate moving averages, moving average differences and standard deviations. This does not detract in any way from the value of channels which are drawn freehand by investors who do not have access to a computer. With experience and practice, there will be virtually no difference between the results obtained by such investors and their computerised colleagues. Where the latter score will be in convenience and the ability to do their own research in terms of experimenting with a wide variety of channels and averages with the minimum of effort. They will still, at the end of the day, have to project their computer-produced channels into the future in order to predict investment decision points.

Chapter 8. Turning Points in Share Prices

The most important lesson that can be learned in stock market investment is never to buck the trend. If the trend in a share price is headed downwards, then it is not safe to invest in that share until the trend has changed direction. It is vital that the investor does not anticipate the end of a trend, since the principle of variation in the periodicity and amplitude of the cycles that are present in the share price can mean that in extreme circumstances the predicted change may not occur. Even if circumstances are not extreme, the turning point may be delayed for a considerable number of weeks, during which the share price will continue to move in the adverse direction.

The prime safety factor that will prevent investors making such a mistake is discipline. Under no circumstances should an investment be made or sold until there is firm evidence that the trend which is being followed for the purposes of the investment has changed direction. The risk involved in trying to get in at the exact bottom of the market or get out at the exact top of the market is too high to be acceptable in return for the extra few pennies that will be squeezed out of the subsequent share price movement. The method of channel analysis is the most powerful available for predicting share prices and detecting turning points in share prices, and if the share has been chosen properly, the rise will be such that the loss of a few pence at either end is irrelevant. Always remember that the predictive ability of channel analysis has to be used in one way only, and that is to predict turning points so that they will be recognised as, or just after, they occur. Channel analysis prediction must never be used to take up an investment position in advance of the predicted event. The preservation of capital has to take precedence over any gambling instinct that the investor is fighting to control.

Two types of turning points occur in share prices, irrespective of whether long-term or shorter-term cycles are being followed. The turning point can be gently curved, with numbers of troughs or peaks behaving impeccably

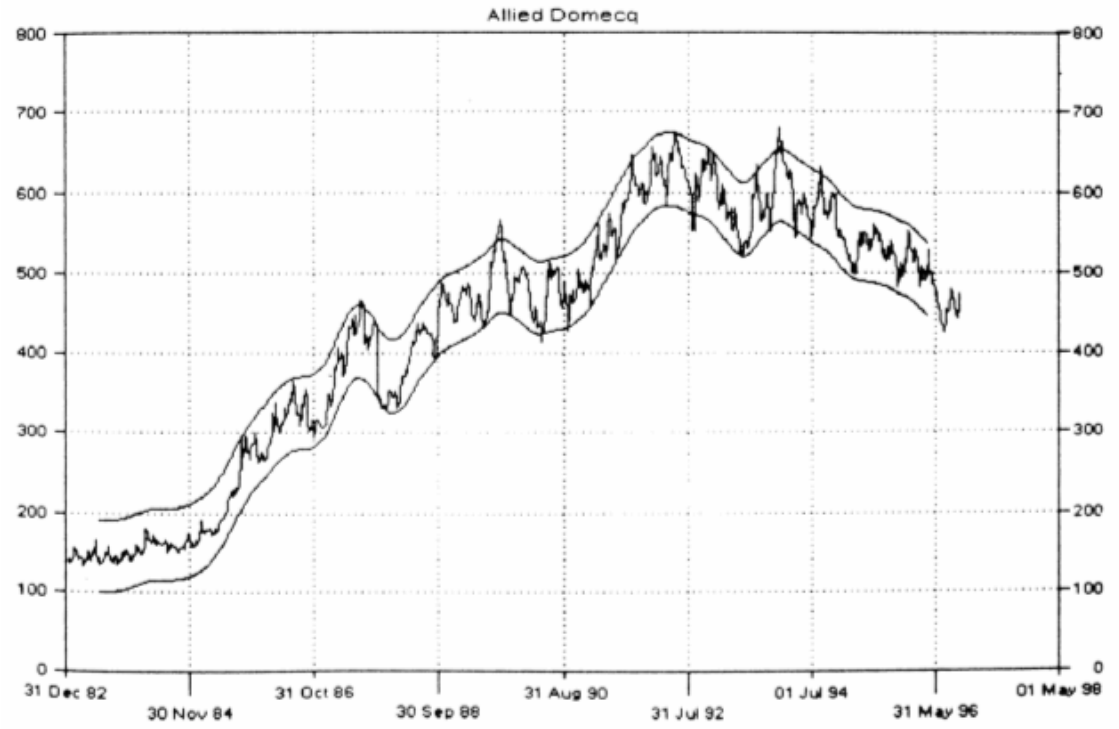
and falling almost exactly on the gently curving channel boundary. Because the channel is curving gradually, the investor will be able to get in or get out within a few pennies of the bottom or top of that particular trend. The rate of change of the share price is low, and therefore the investor has the luxury of a number of weeks after the bottom or top has been passed before he starts to lose more than a few pennies out of the new rising or falling trend. The turning point can also be extremely sharp, with peaks or troughs penetrating the boundaries of the channel to a much greater extent than would be predicted from the previous shape of the channels. The rate of change of the share price is enormous, and rises or falls of 5% or even 10% can occur over the course of a week. The last thing the investor has is the luxury of time. A delay of more than a week in taking a decision to buy or sell can be extremely costly. The most costly of course is to delay the selling point, since money already acquired, at least on paper, is being lost. Delaying the buying point is not quite as disastrous, since a gain will still be made out of the rise which is now under way. Because of this problem with selling, an additional technique must be applied to that of channel analysis, and that is the use of stop losses. The ways in which these can be applied are discussed in Chapter 10.

SCATTER OF POINTS WITHIN A CHANNEL

So far we have looked at channel boundaries in the simplest way. They are drawn so as to limit the number of points that lie outside or on the boundary. When drawn by computer, a starting point for the number of points which lie outside the boundaries is about 3.5% of the total number that are present in the data. Thus with a plot of 1000 points, the computer would allow 35 points to lie outside the boundaries. When drawn manually rather than by computer, the investor allows a small number to lie outside the boundaries, and is instinctively reaching a value of between 1% and 5%. The value is not critical. If it is increased, then the channel gets narrower, with more peaks projecting outside the boundaries. If it is decreased, eventually we reach a point where a small number of points, perhaps even just one point, lie exactly on the boundary, and none outside it. The channel will get wider as this number decreases.

The reason why 3.5% is a useful starting number is the requirement to have a balance between only one point at a boundary and many points outside the boundary. In the first case, the probability of a future point lying at or beyond the boundary is low, so that we would never predict a bounce in price from the boundary, since prices would lie more towards the centre of the channel. In the second case we would have a multitude of occasions where the price reached the boundary, and only a proportion of these would be genuine turning points in which the price would then retreat. The others would proceed some way beyond the boundary before turning.

Figure 8.1 The Allied Domecq share price with a channel computed from the 53-week weighted average. The overlap, i.e. proportion of points allowed outside the boundaries, is 3.5%. Since the channel is based on a 53-week average, it terminates half a span, i.e. 27 weeks, before the latest data point

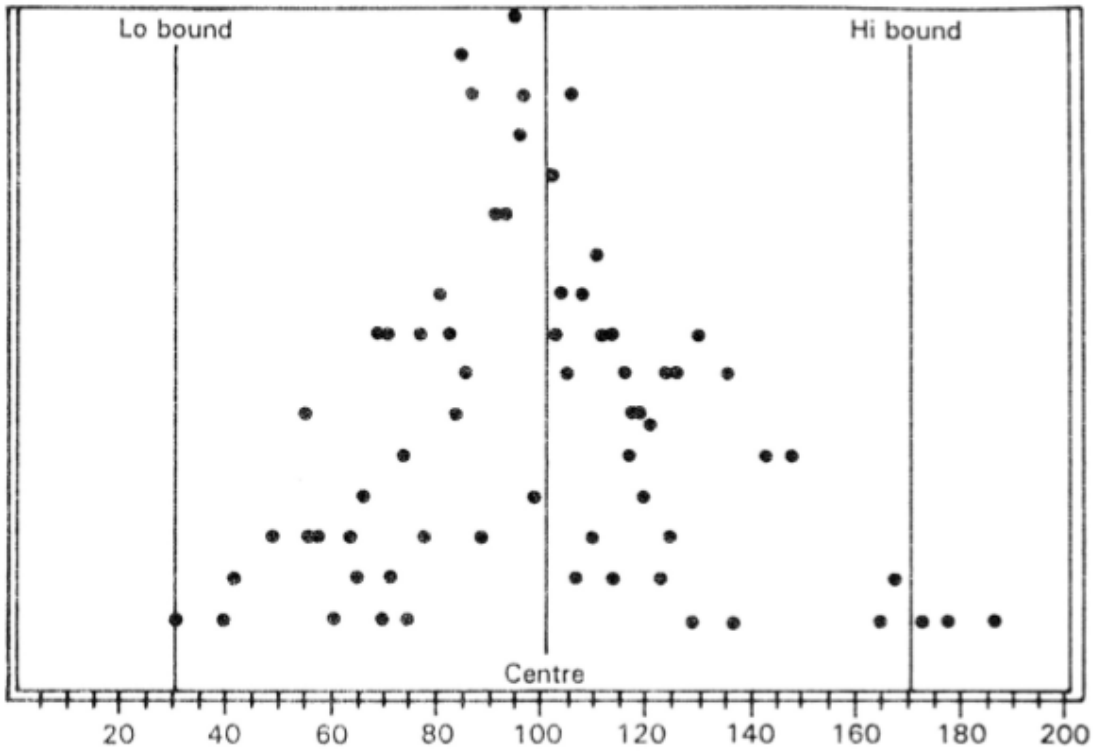


A better appreciation of this point can be obtained by looking at the scatter of points within a channel, i.e. how far they lie from the upper and lower boundaries. Figure 8.1 shows the data for weekly closing prices of Allied

Domecq since the beginning of 1982. A channel based on the 53-week weighted average has been drawn, with the overlap of channel boundaries being set at 3.5%. Note that the channels terminate 27 weeks before the last data point. This is because the channel is based on a moving average, and the last true calculated point of the centred average is at this point half a span back in time, as discussed in Chapter 4. When we come to look more closely at channel turning points, we will see that these depend upon a prediction of how the channel has progressed over this last half-span.

The plot in Figure 8.2 is derived from this, and shows the location of each point of the data relative to the channel boundaries as a percentage distance, with the channel width being 200 units. Thus the centre corresponds to the point 100. There are only a few points lying outside the channel boundaries. The vertical scale represents numbers of points at the particular distance from the centre of the channel.

Figure 8.2 The scatter of the individual points within the channel in Figure 8.1

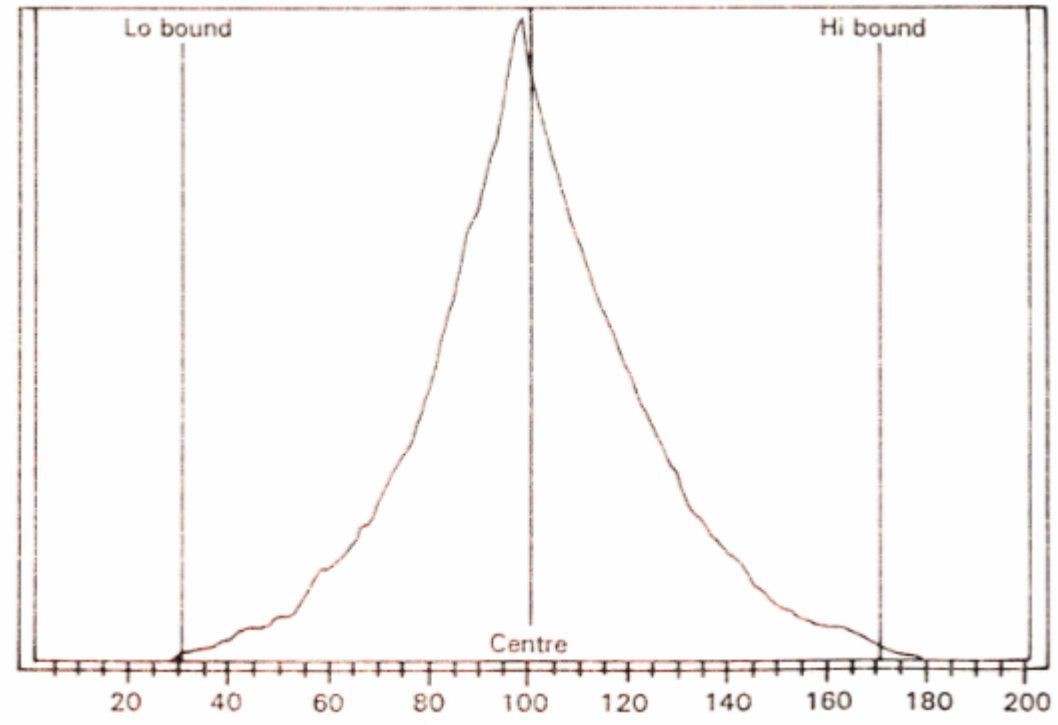


Most points lie towards the centre of the channel, and the numbers of points decrease as we get closer to the boundaries.

A more meaningful discussion can follow the conversion of the data in Figure 8.2 into probabilities. This is done in Figure 8.3. It is the shape rather than exact values for probability that is important. The curve represents the probability that a point lies between a specified place on the horizontal axis and the nearest channel boundary. The probability is highest at the centre of the channel, and as we approach the boundaries this probability decreases rapidly. This is the crucial point about channel analysis. **Channel boundaries represent low probability areas** , since the price spends very little time in these regions. This is easily confirmed by inspection – the price does not run along channel boundaries but rebounds quite rapidly. **Channel centres represent high probabilities**, and the price spends more time in this part of the channel.

If a price is currently at the boundary, and therefore in a low probability area, then the probability remains low that it will still be there the next week or next day. The most likely outcome is that the price therefore retreats to a place where the probability is higher, i.e. back towards the centre of the channel.

Figure 8.3 The data from Figure 8.2 converted into probabilities. The vertical axis is the probability that a point lies between a specified point on the horizontal axis and the channel boundary. No values are given to the probability since it is the shape of the curve that is of interest. Note that there are low probabilities for the points lying near the boundaries



We now come back to the major difficulty with channels, especially computed ones, and one which requires the most careful analysis. This is the question of filling in the gap between the last computed position of the channel and the present time or near future. As we shall see when looking more closely at this question, the channel may well have already changed direction, so that we would be in error in assuming the channel is running in the same direction as it was at the last computed point.

GENTLY CURVED CHANNELS

The SmithKleinBeecham share price is one which shows a very rounded turn in the 53-week channel, as shown in Figure 8.4. Looking back from the futures, it can be seen that the channel bottomed out with the trough in the price at 364p, on 15th April 1994. This was at week 589 from the start of the data.

Since the channel is based on a 53-week average, it would be 27 weeks hence from the 15th April, i.e. 21st October 1994, before the calculation

of the channel gave its true position on 15th April. This position is shown in Figure 8.5.

Figure 8.4 The gently curving channel in SmithKleinBleecham. Historically it can be seen to have turned on 15th April 1994 when the price bottomed out at 364p.

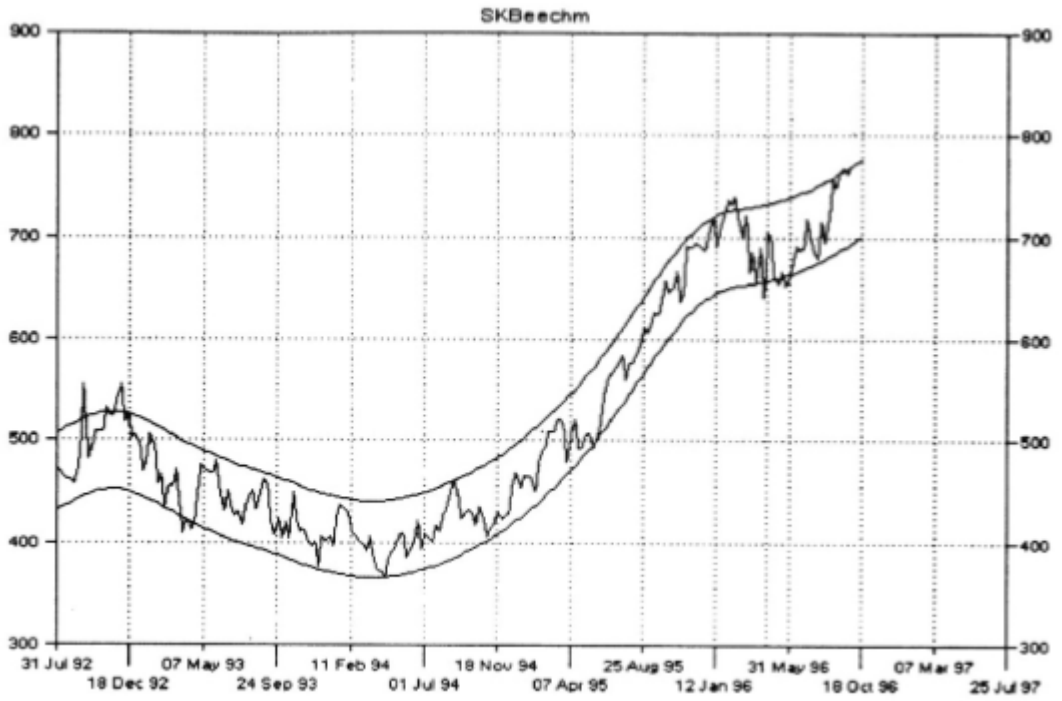
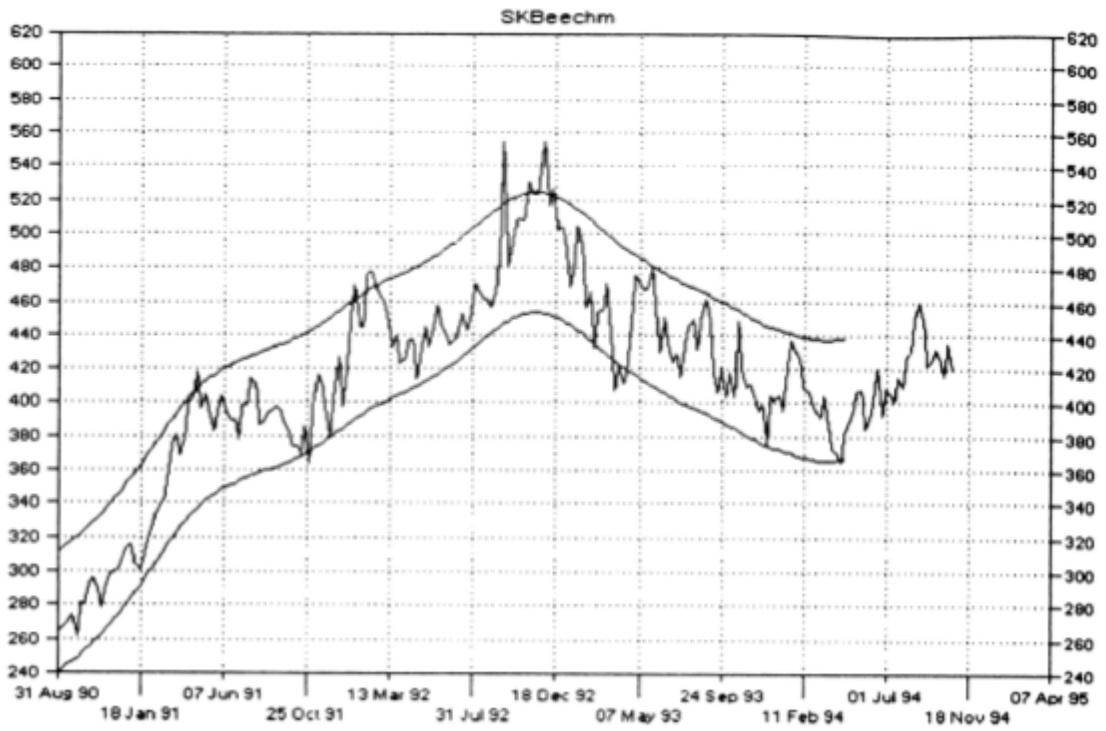


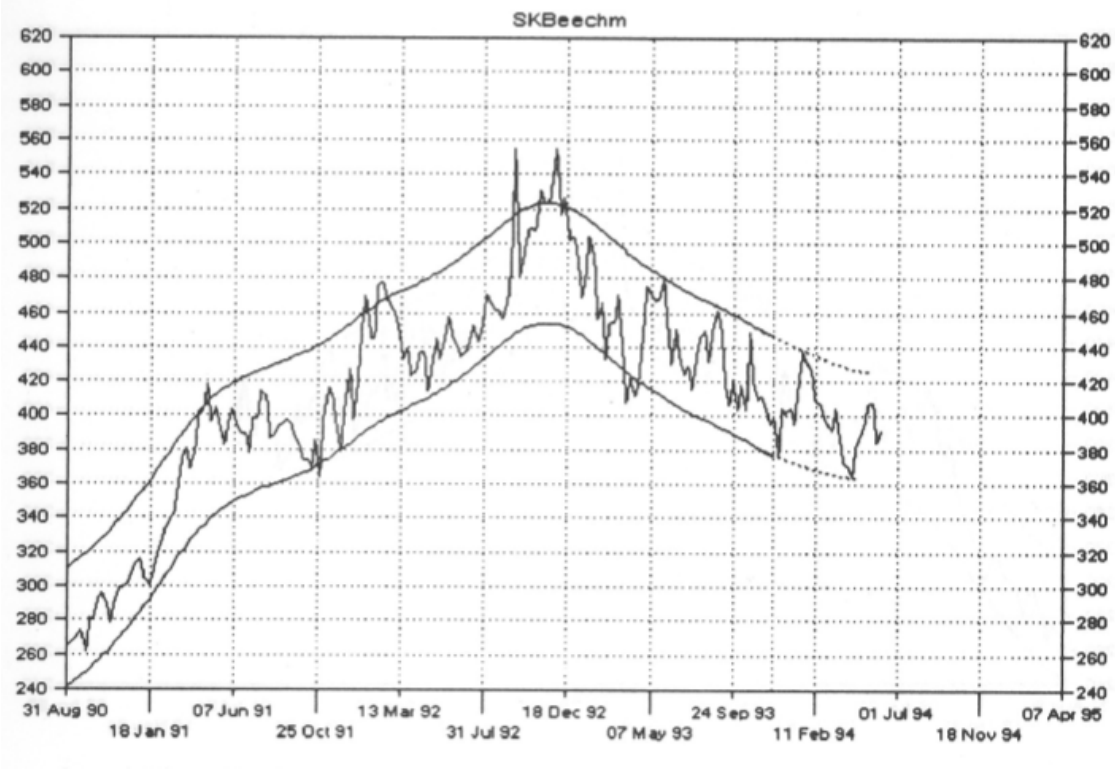
Figure 8.5 Because of the lag in a central average, the true position of the channel at 15th April 1994 cannot be determined until 27 weeks later on 21st October 1994



Thus between the points of 15th April and 21st October we are put in the position of having to deduce the position and direction of the channel boundaries before an investment can be made.

Figure 8.6 shows the estimated latest position of the 53-week channel on 3rd June 1994. Prior to that point the channel had been falling quite steadily. The feature that is vital to our estimation that the rate of fall of the channel might be slowing is the significant trough formed on 15th April. This cannot be considered to be a minor trough since it has been formed by a fall from the top of the channel with hardly any hesitation. Since we consider it to be so significant, we must also assume that it lies on the lower channel boundary. If this is the case, then the rate of fall of the channel must be decreased, i.e. the channel must be bent from its previous direction in order to achieve this.

Figure 8.6 The position of the channel as estimated on 3rd June 1994. There are signs that the rate of fall of the channel is slowing down. If we asssume that the significant trough on 15th April must lie on the lower channel boundary, then the channel curvature has to be decreased as shown



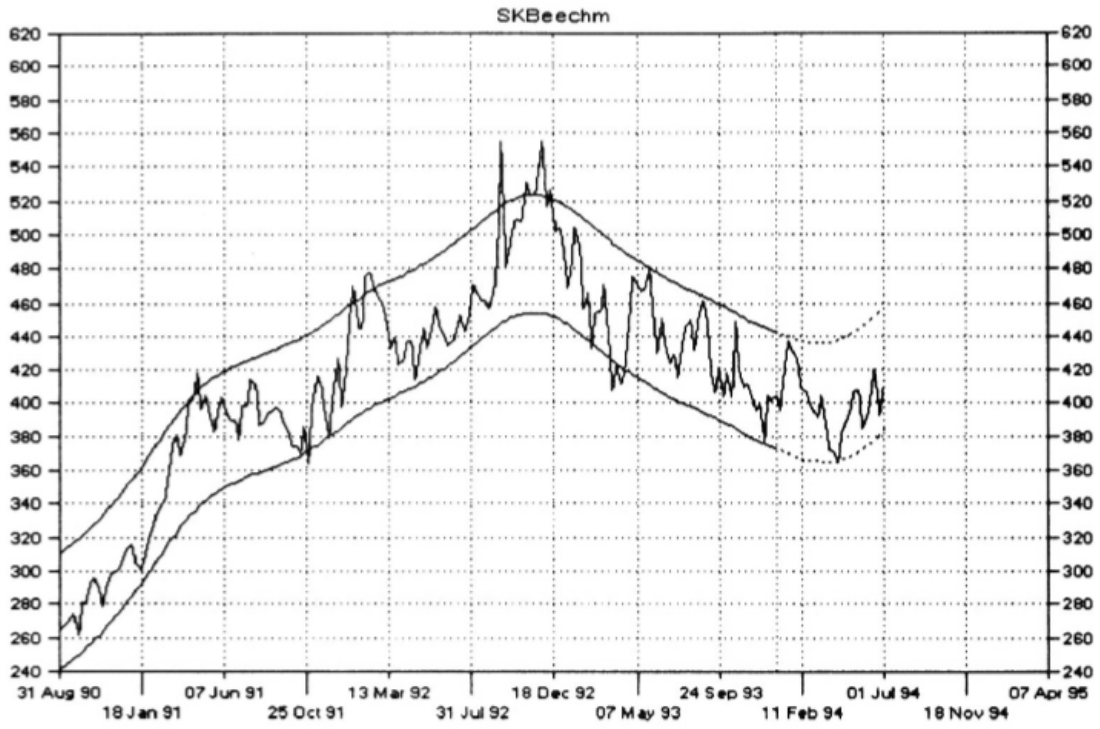
This is about as far as we can go with the prediction at this point, which is of course some seven weeks past the point at which, well into the future (Figure 8.4), we were able to estimate that the channel had turned. This is still an excellent prediction since we are only about a quarter of the way across the gap of 27 weeks until the turning point is known with absolute certainty.

Naturally, as we proceed towards the point (21st October 1994) at which we will know the turning point with total certainty, our estimation of the channel position should improve with each new week's data point that can be entered into the channel calculation.

In Figure 8.7 is seen the position as estimated a further four weeks, on 1st July 1994. The extra four data points when entered into the channel calculation show that the downward trend of the channel is decreasing rapidly. An extrapolation of this slope shows it to have bottomed out, i.e. the channel has changed direction. We still need additional confirmation of this fact, and this is given by the two troughs which occur after the significant one on 15th April. These lie close to the extrapolated, upward

trending boundary, giving us extra confidence that the channel has now changed direction.

Figure 8.7 The position of the channel as estimated on 1st July 1994. The addition of four more data points has given a decreasing curve to the channel at its last calculated point. An extrapolation of this curve gives a turning point in the channel. There are also some recent minor peaks which support the fact that the channel has changed direction



This is a case where attention was focused on features lying on just one boundary, the lower one in this case, in order to confirm that the channel had changed direction. It was not necessary to pay attention to the channel depth. There are, however, cases where features at the opposite side of the channel can be used to confirm its turn because of the necessity of maintaining a constant depth.

This approach is shown by the example of GEC. Figure 8.8 shows that there was a gently curved channel which turned on 8th October 1993 with a peak price of 365.5p.

Figure 8.8 The gently curving channel in the GEC share price, using a 53-week weighted average

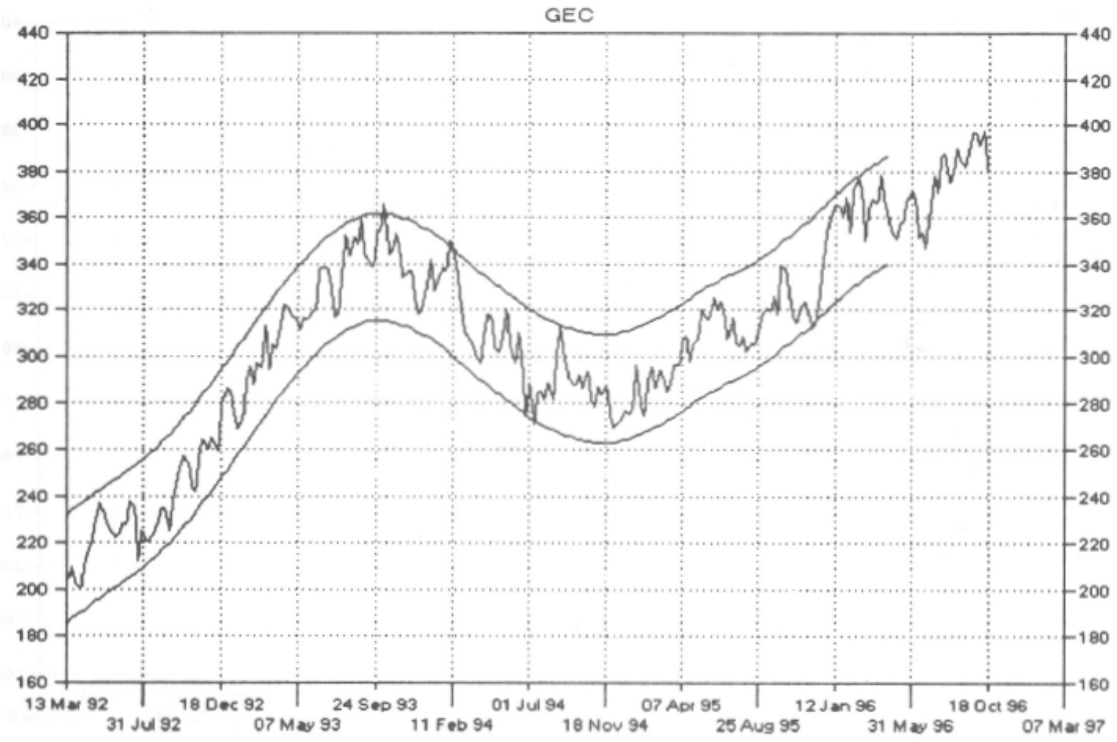
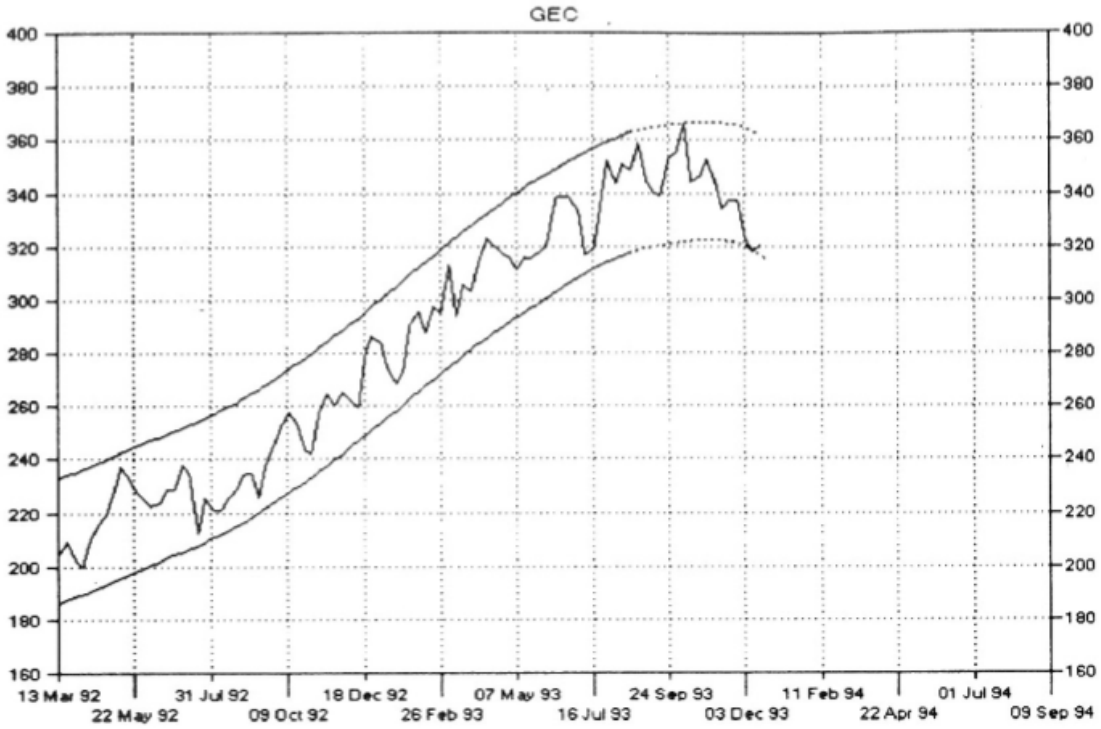


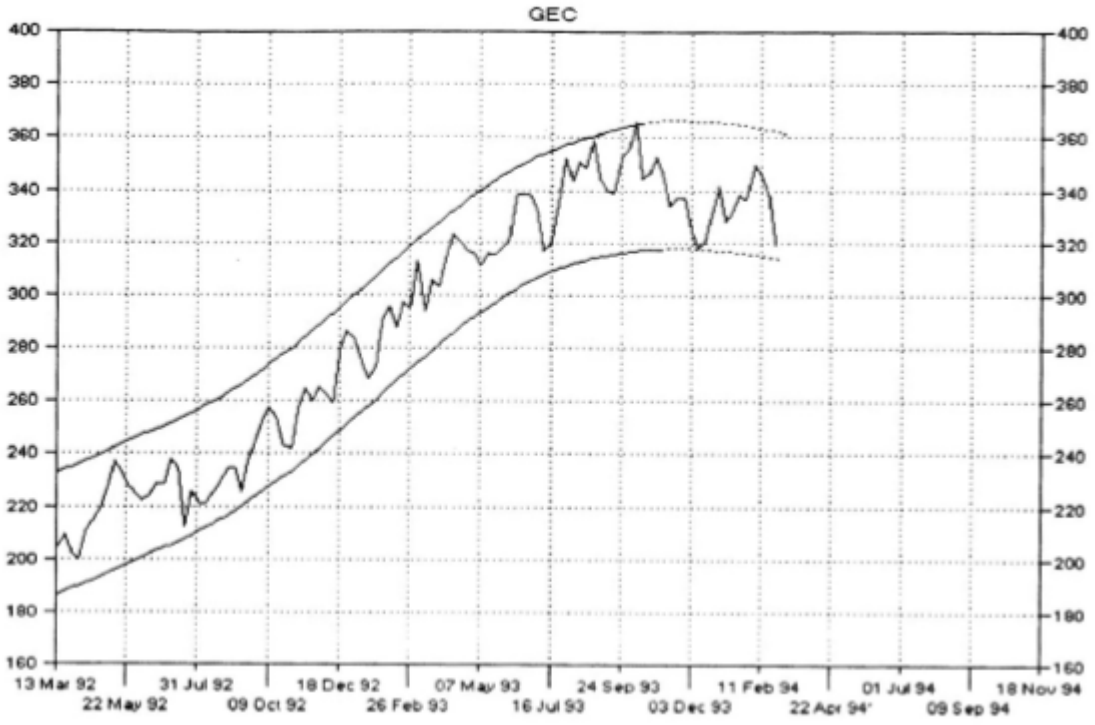
Figure 8.9 The calculated channels in GEC on 17th December 1993. This is the first point at which the fall in price would violate the lower boundary. The extrapolated section of the channel must be bent in order to accommodate both the peak on 8th October and the latest price of 320p



It was not until 10 weeks after this peak price, i.e. on 17th December 1993, that the first indications were given that the channel may have topped out (Figure 8.9). This follows from the fact that the price has fallen to 320p. If the previous constant depth of the channel is to be maintained and the upper boundary is to go through the peak of 365.5p, then the price level of 320p would be well below the lower boundary. Since we are striving to limit the number of points which lie outside the channel boundary, the only way to keep both the peak at or near the upper boundary, and the price of 320p at or near the lower boundary, is by forcing the channel into a bend with its extreme at the peak of 365.5p. Thus we have come to the conclusion that the channel has changed direction, but only by taking into account both boundaries of the channel and the requirement for a constant depth, unlike the previous case where looking at just one boundary gave us all the information we required. Note that since a trough has not yet been formed in the share price, we would have to keep increasing the bend in the channel each week as long as the share price kept falling in order to keep the latest price at the boundary.

Thus the channel boundary is not fixed until we get a trough formed which will be assumed to lie on the boundary. This position is reached a few weeks later, as shown in Figure 8.10. We now have almost total confidence that the channel has changed direction because the lower boundary is fixed by the trough which has been formed.

Figure 8.10 By 25th February 1994 we are now convinced that the channel has turned down because the trough must sit on the lower boundary



It was not until 27 weeks have passed from the position of the peak price, i.e. on 15th April 1994, that the calculation would give us the true position on 8th October 1993, showing that the channel had topped out.

These two examples have illustrated the careful analysis which must be carried out to decide when a channel has changed direction from a falling one to a rising one, or from a rising one to a falling one. Note carefully the general method of extending the channel gradually. We look for the next peak or trough which will enable us to extend the upper or lower boundary, as the case may be, and then seek to extend the opposite

boundary while keeping a constant depth by looking for the next trough or peak. If these fall on the projected boundary, all well and good, otherwise we have to take a decision as to whether the boundary should be curved more or less in order to accommodate this new trough or peak. If a major accommodation is required, then we need the next peak or trough to confirm that the channel is changing direction.

SHARP TURNING POINTS

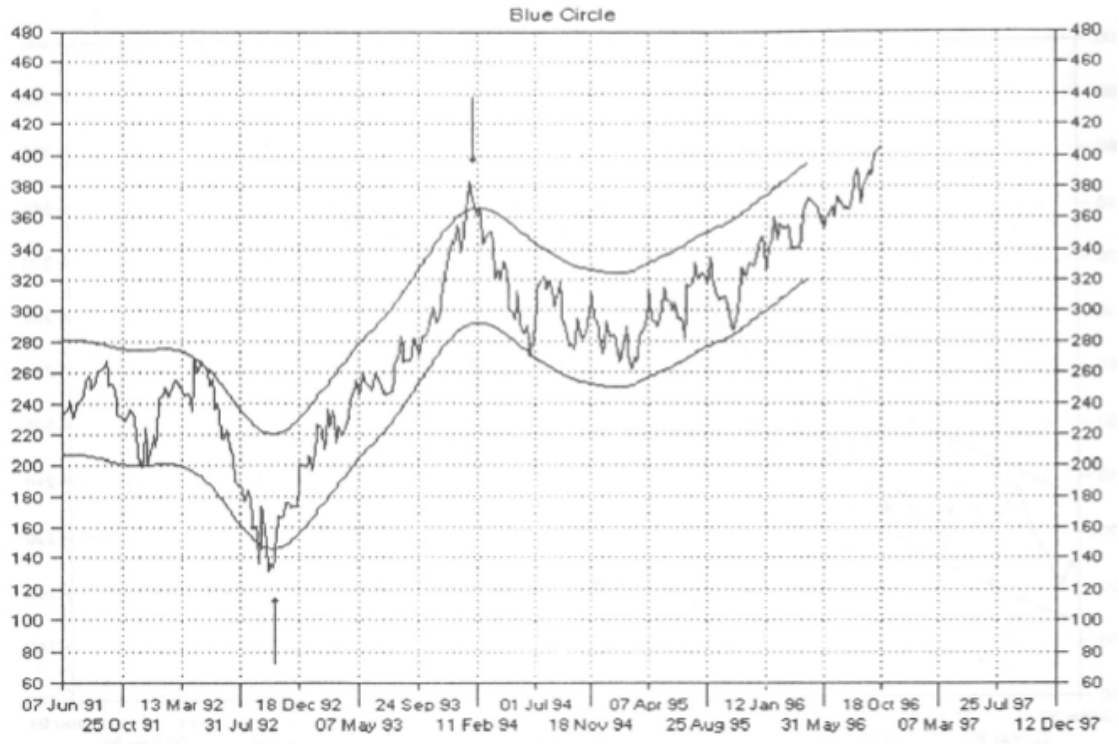
Places where the channel changes direction over the course of just a few weeks see such rapid rises and falls in share prices that they test the principles of channel analysis to the limit. The simple application of the change in direction of a moving average is useless to deal with such sharp peaks and troughs since by the time the average changes direction, the price could, in a bad case, have risen or fallen by as much as 20%. Sharp turning points must be seen as being extremely dangerous for the investor, wiping out a large proportion of his capital unless the most stringent precautions are taken. The luxury of waiting for a number of peaks and troughs several weeks apart and spread out over a reasonable time so that the channel can be well defined is not available. There might only be two peaks and one trough to define a channel which is rapidly bottoming out, or two troughs and a peak to define a channel which is topping out, and therefore rapid decisions will have to be taken.

Fortunately, there is a way around this, since these events give us a very short warning which we must recognise. If we are keeping weekly data, *a sharp rise which is much sharper than has been the norm for that particular share will usually occur. This rise will not only be rapid, but will take us well through the projected channel boundary*. This will happen because we have projected channels on the basis of the previous smooth progressions of the share prices, so any violent movement must of necessity penetrate these channels. It is this unexpected penetration of the channel or channels that tells us that weekly data will no longer be sufficient to track the share price closely enough. This means that we must always have available the daily newspaper which carries that share price, because it will be necessary to do some work in gathering daily prices for

the past few weeks to be able to focus in on our sudden rapid rise in order to draw channels or trend lines of shorter cyclicality than we have been following so far.

The chart of Blue Circle shown in Figure 8.11 is an example where there are two sharp turning points, in October 1992 and January 1994. In both cases the difficulty is that there are no peaks or troughs running near the boundaries, i.e. the price is running down the middle part of the channel. Thus there are no features to enable us to extrapolate the boundary accurately.

Figure 8.11 The Blue Circle share price shows two sharp turning points in the 53-week channel on 2nd October 1992 and 21st January 1994



Taking the turning point on 21st January 1994, it is not until 27 weeks have passed that the turn in the channel can be established from the calculation. This position is shown in Figure 8.12. The first point prior to that accurate calculation when there was any indication that the channel might have changed direction was on 22nd April 1994, as shown in Figure 8.13. By

the following week, 29th April, as shown in Figure 8.14, we are much more confident that the channel has changed direction. Unfortunately this is some 15 weeks after the true turning point, much too long a delay to be of any use.

We have the same situation with the rapid change in direction in October 1992. Figure 8.15 shows that it was not until 9th April 1993 that the calculation would give us the true picture on 2nd October 1992, showing that the channel had changed direction.

Figure 8.12 It is not until 29th July 1995 that calculation of the channels gives us the true picture on 21st January 1994, showing that the channel had topped out

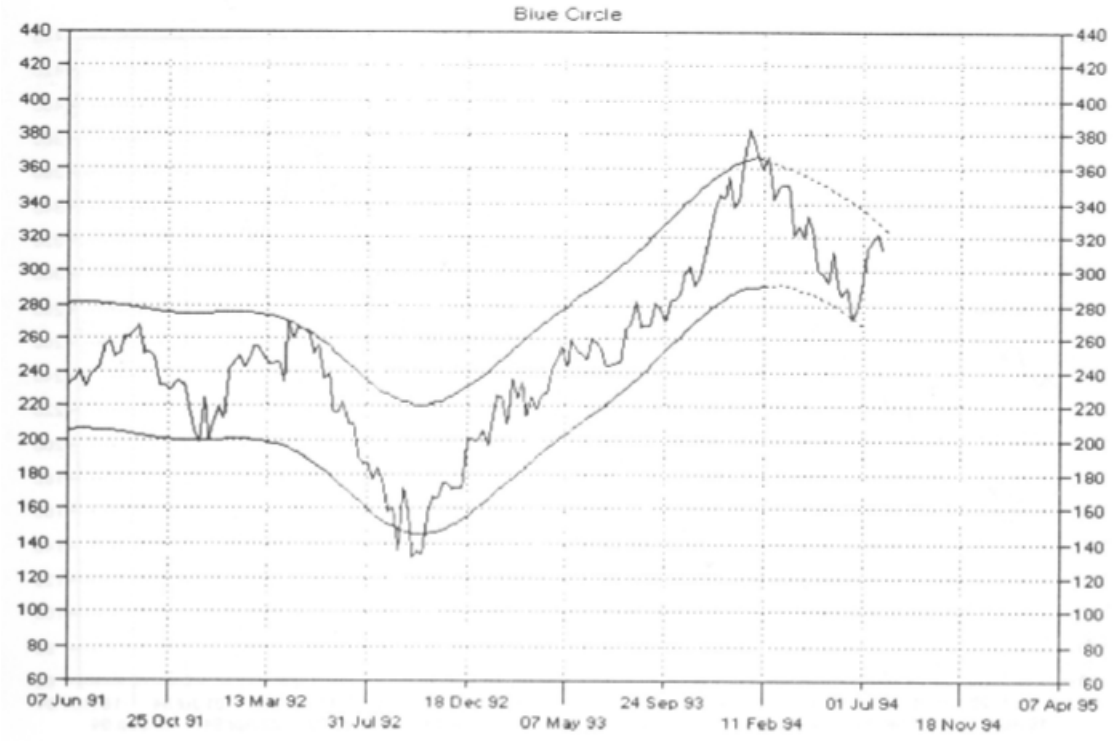


Figure 8.13 This is the first time that there is a faint indication that the 53-week channel in Blue Circle might have begun to change direction. This is because we cannot accommodate both the peak and the latest share price within the same channel boundary without bending it

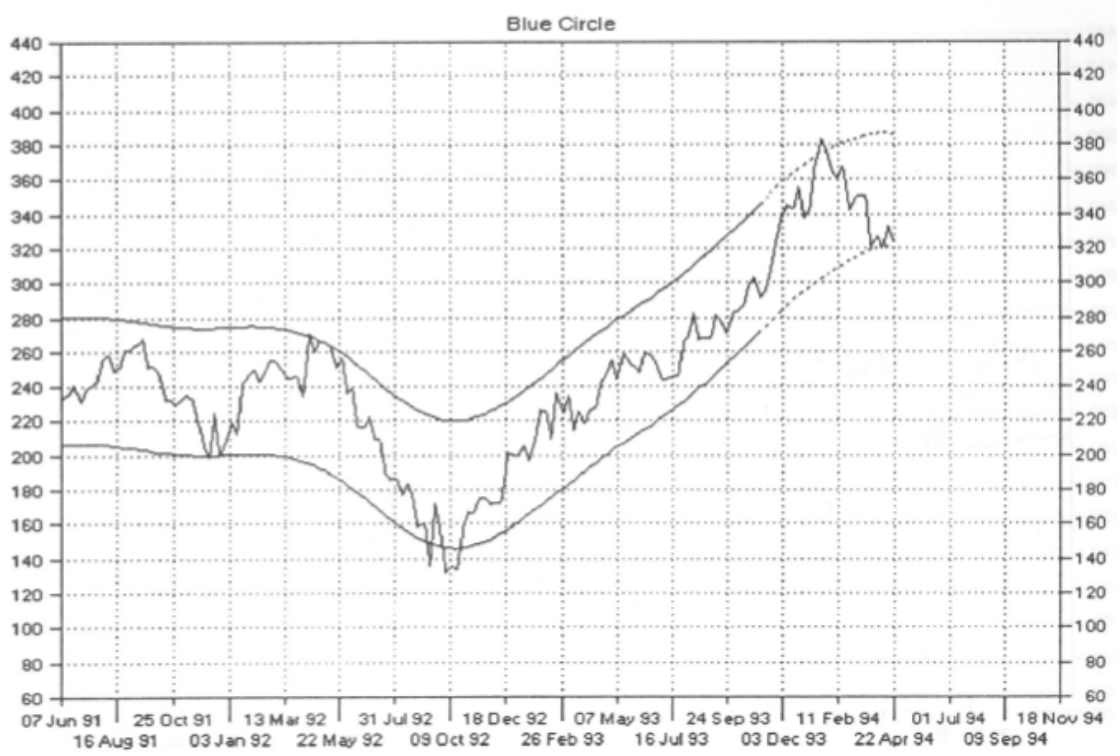


Figure 8.14 A week later we have much more confidence that the channel has changed direction

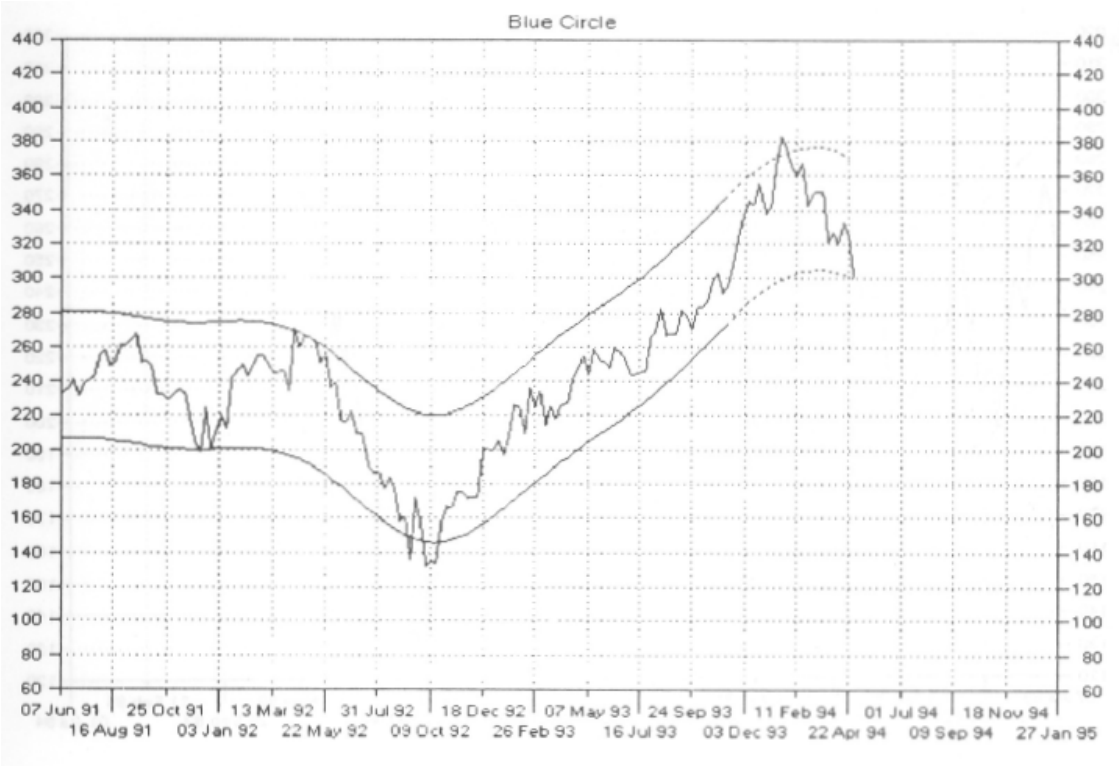
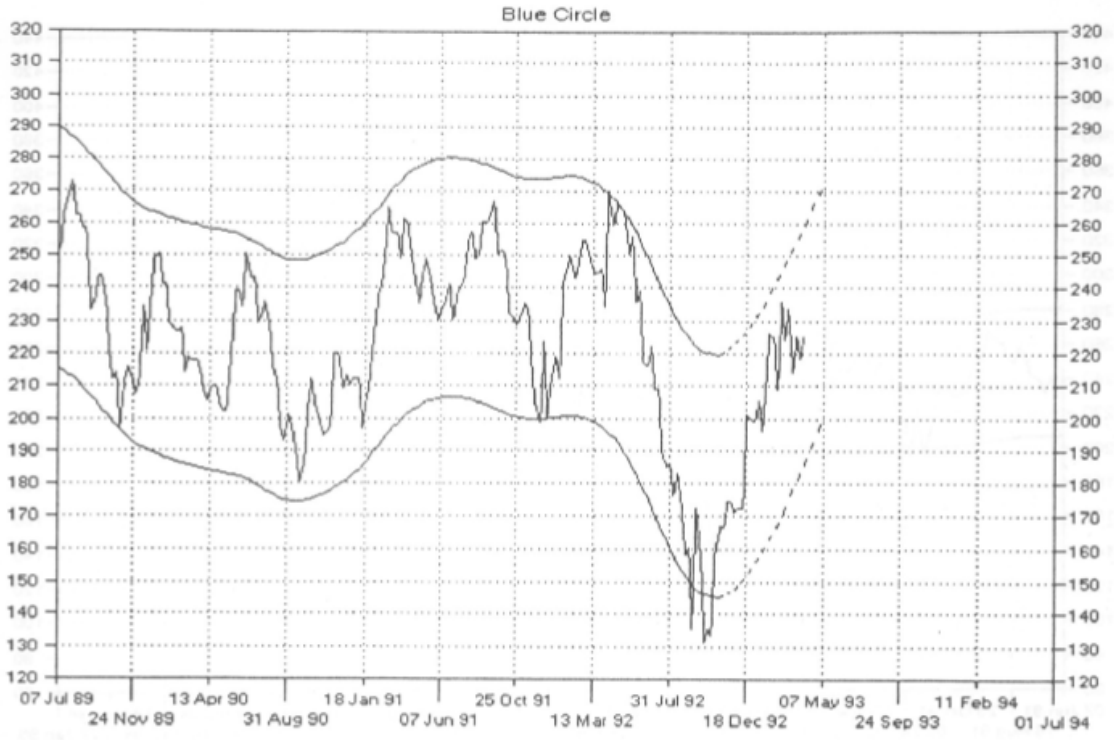
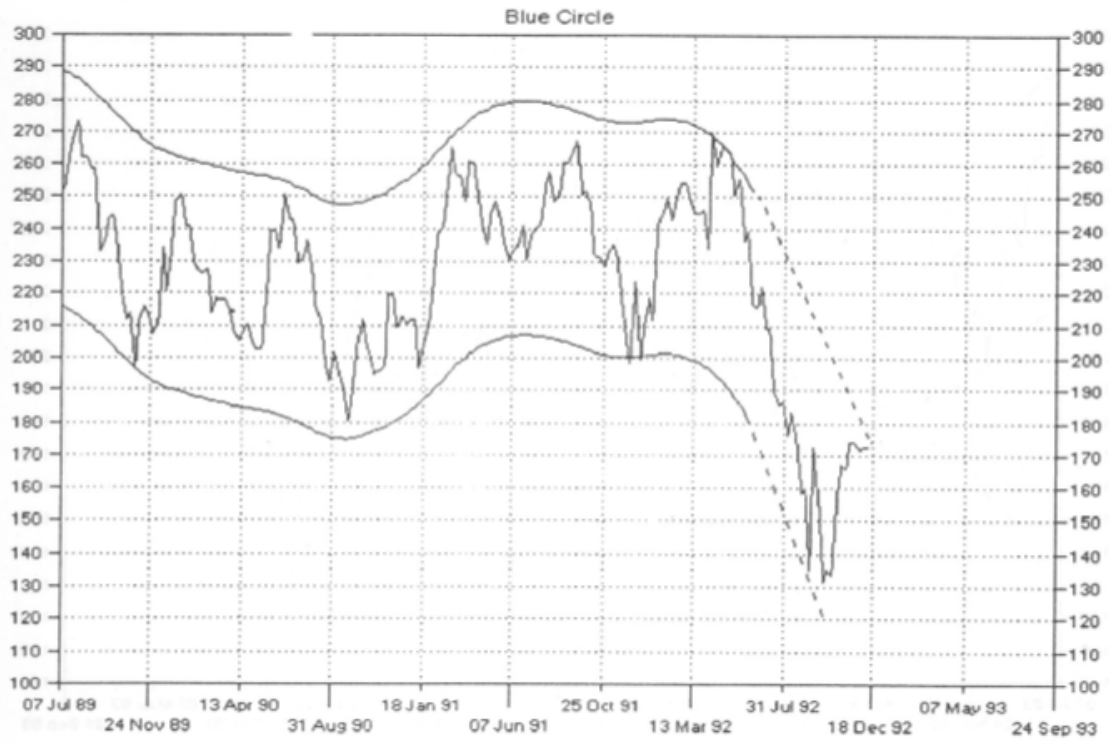


Figure 8.15 It was not until 9th April 1993 that the true turning point in the channel on 2nd October 1992 could be calculated with 100% certainty



Taking a view on 11th December 1992, as shown in Figure 8.16, we would still conclude that the channel was headed downwards, since there is no indication of any bend in the calculated channel, and no feature of peak or trough that would give an indication that the direction has to be changed. However, a week later on 18th December (Figure 8.17), there is a sign that the channel slope is decreasing, although there are still no features that would give any added confidence to this interpretation. Thus, even 10 weeks after the actual turn in the channel, we are still faced with only a slight possibility that the downtrend has changed direction, but this is so slight as to make any investment at this point a wild gamble which we should not take.

Figure 8.16 Even on 11th December 1992, 10 weeks after the actual turn in the channel, we would still come to the conclusion that it is falling



The delay we have seen with sharp turning points when weekly data are used can be overcome to a considerable extent by using daily data. Taking the January 1994 turning point in Blue Circle, the daily data are shown in Figure 8.18 as on 24th February 1994, i.e. a month after we know the actual turn occurred from the historical viewpoint. The price fall to a point well below the inner channel boundary must mean that the latter has changed its slope considerably. We therefore feel that the latter is approaching its turning point.

Just over a week later, on 7th March (Figure 8.19), a significant trough had been formed in the share price which we must assume lies on the lower boundary of the inner channel. In order to accommodate this, and to allow the previous peak to lie close to or just outside the boundary, we have to reverse the channel direction at the position of the peak in January. The knock-on effect of this is that the longer-term 53-week channel, transcribed as shown to this figure, must also change direction at the peaks in January.

Figure 8.17 On 18th December 1992, 11 weeks after the actual turn in the channel, we would see a slight indication of a change in the rate of fall of the channel

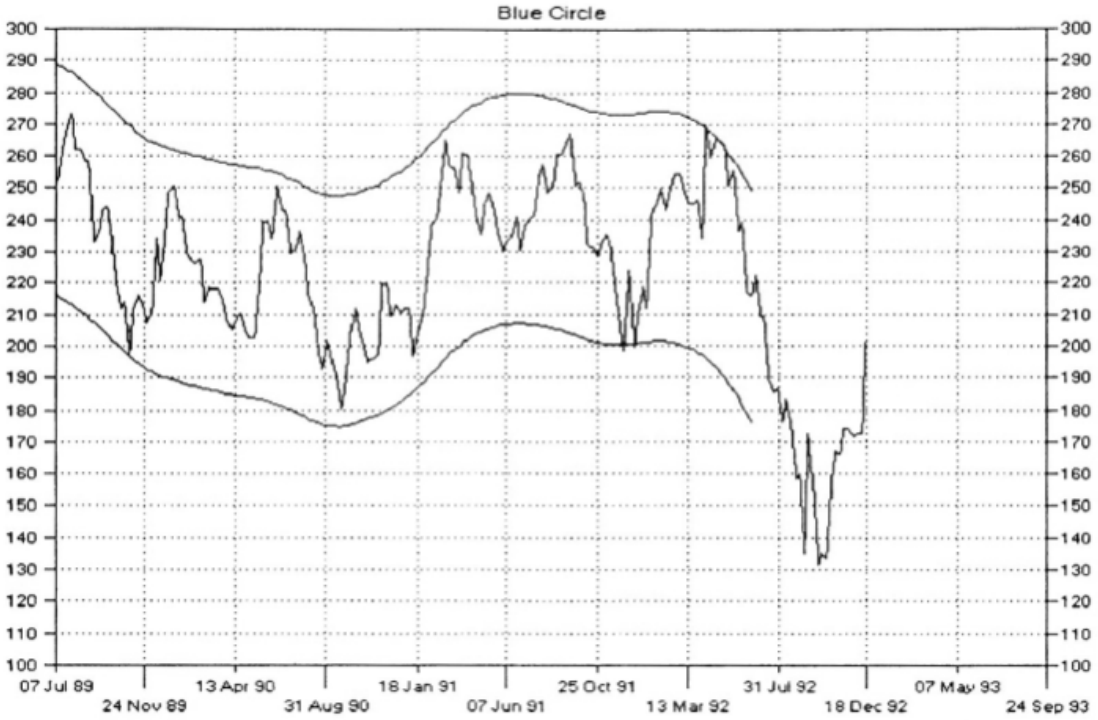
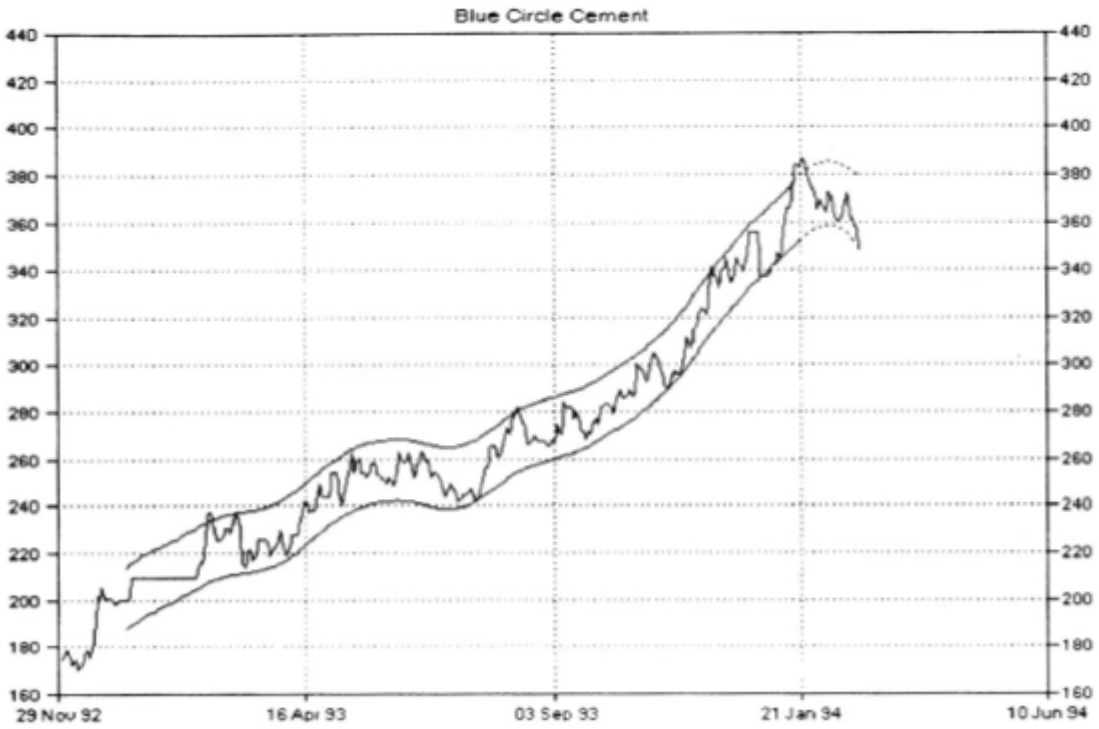
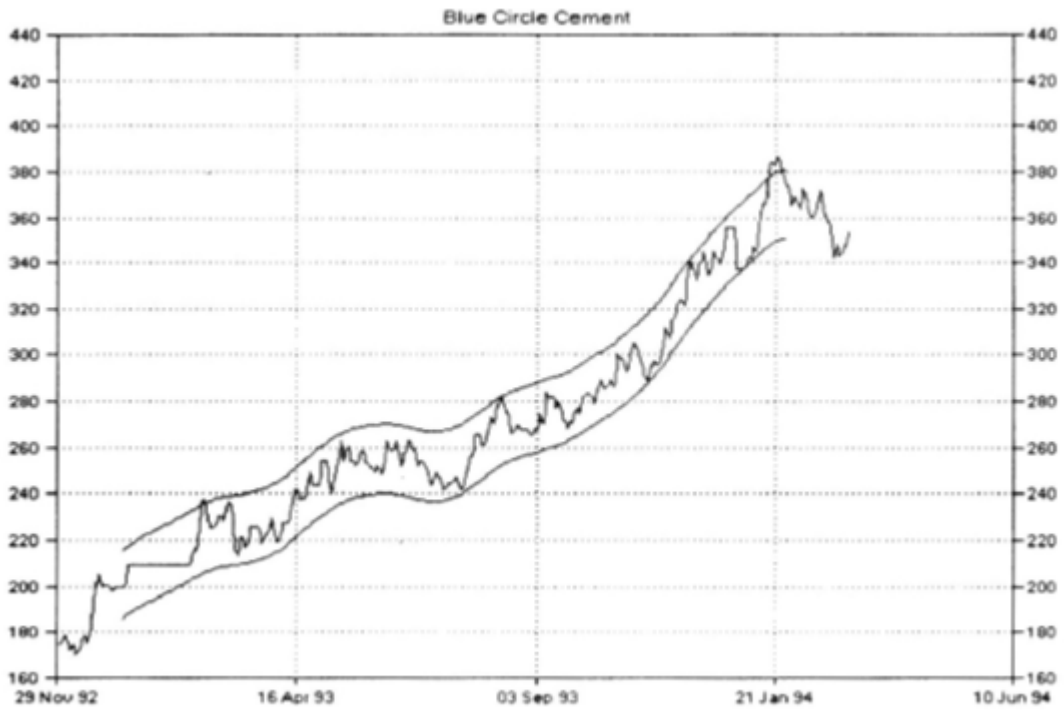


Figure 8.18 Channels produced from daily data for Blue Circle on 24th February 1994. The fall in price to a point well below the previous direction of the channel indicates that the channel has changed direction



By using daily data, therefore, we have come to the conclusion that both the short-term and long-term trends in the Blue Circle share price have topped out. This conclusion was reached only eight weeks after the event, as opposed to the long delay to 29th April that we had to suffer with weekly data.

Figure 8.19 The position on 7th March 1994. The trough which has been formed now gives us a location for the lower boundary. This confirms that it changed direction at the peak in January 1994



The same advantage can be shown for the turning point in October 1992. The position with daily data on 28th October 1992 is shown in Figure 8.20. The price has risen to a level that takes it above the previous downward path of the channel. This necessitates a revision of the channel, giving it a lesser slope. Thus we have the first indication that the channel may be about to change direction.

Just over a week later, on 9th November (Figure 8.21), the turn in the calculated channel can be seen quite clearly. By taking into account the peak that has been formed we are able to deduce with high confidence that the channel must have changed direction, probably at the point where the lowest trough occurred in October 1992. This change in direction of the channel will eventually lead us to the conclusion that the outer, 53-week channel has also changed direction. Thus we are being given the nod for an investment in a recently formed rising trend only five weeks after the trend can be shown to have changed direction from the historical perspective. When only weekly data were used, it was early 1993 before it became apparent that the channel was now rising.

Figure 8.20 Channels produced from daily data for Blue Circle on 28th October 1992. The rise in price to a point well above the previous direction of the channel indicates that the channel has changed, or is about to change, direction

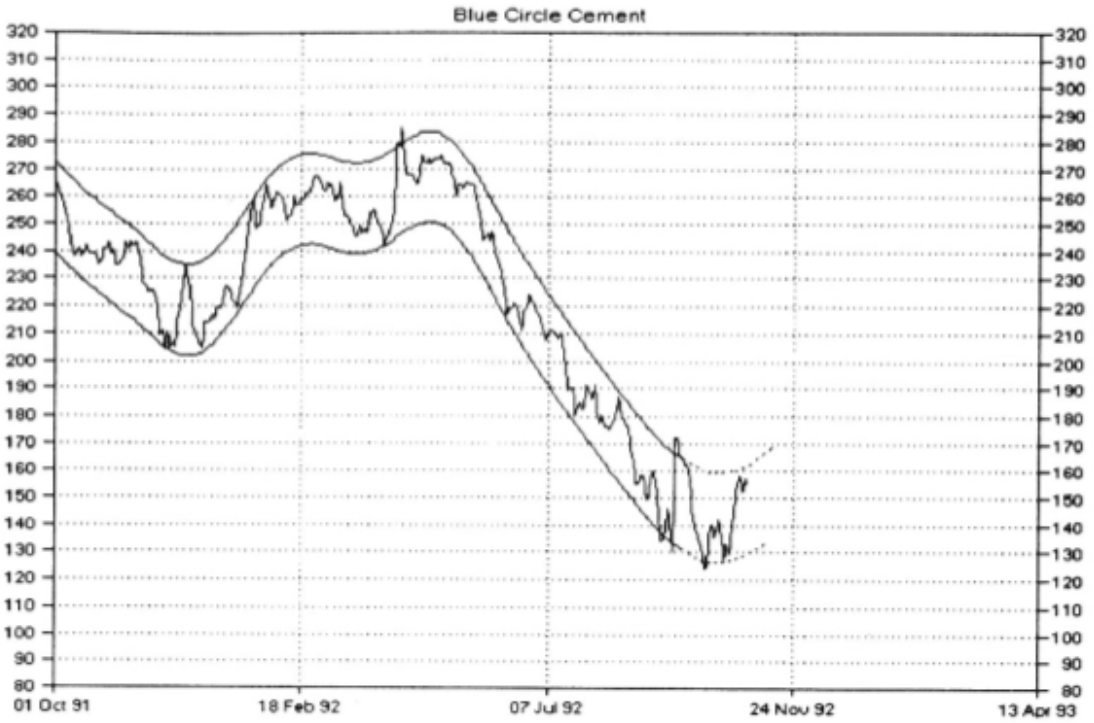
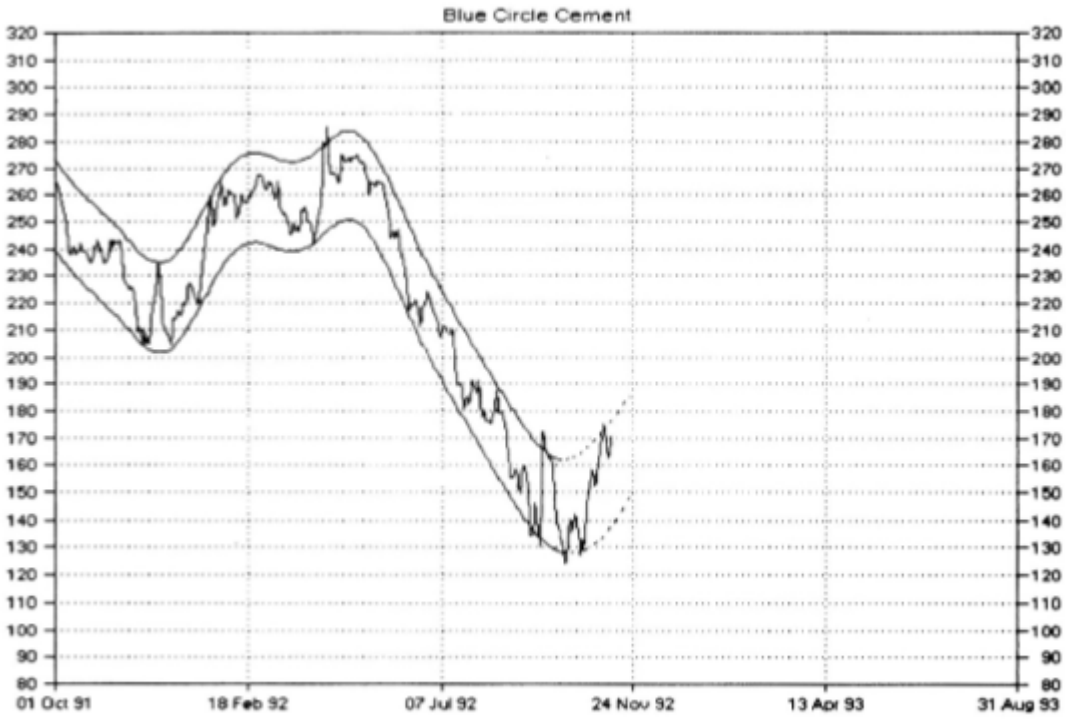


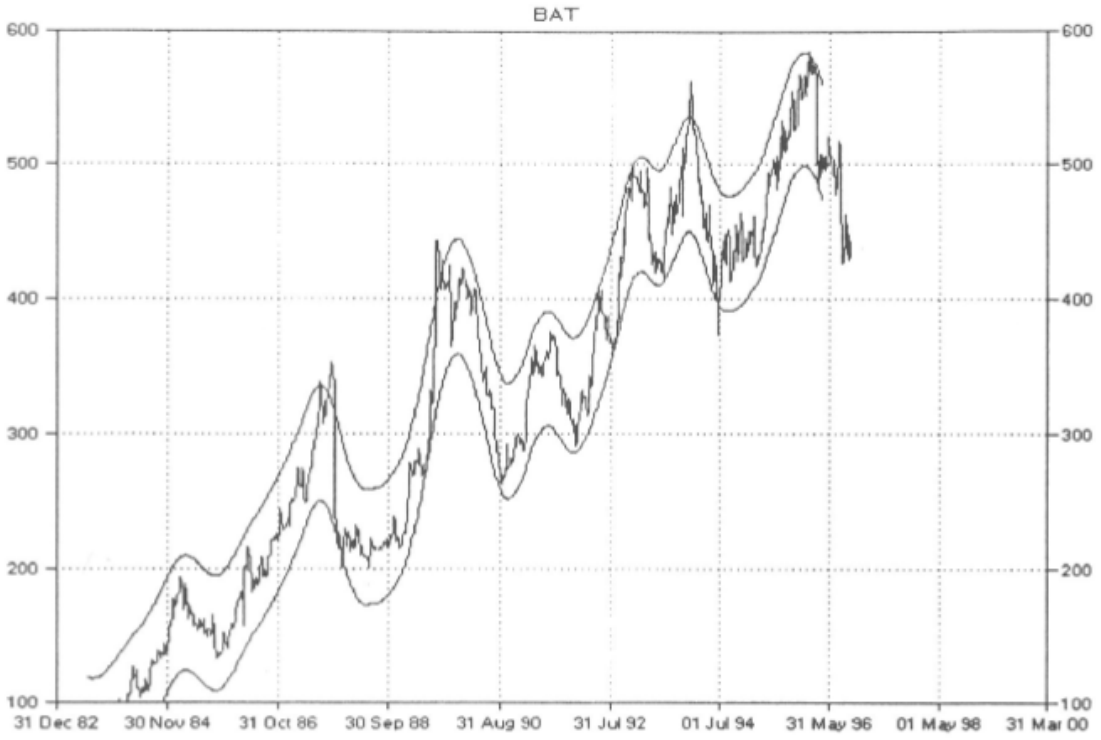
Figure 8.21 The position on 9th November 1992. The peak which has been formed now gives us a location for the upper boundary. This confirms that it changed direction at the trough in October 1992



TURNING POINT SYMMETRY

For a small time window centred at the channel turning point we find that there is a high degree of symmetry. By this we mean that where the channel was falling and changes direction, the new upward path is virtually a mirror image of the previous downward path. The same applies to channels which rise and then fall. The amount of symmetry is at its highest for the shorter trends, but can get distorted for longer-term trends. A closer look at the turning points in BAT as shown in Figure 8.22 brings home this point. The channel is based on a 53-week average.

Figure 8.22 Channels produced by a 53-week moving average in the BAT share price showing a high degree of symmetry at the turning points



This fact is very useful when we have come to the conclusion that a channel has changed direction but before we have enough data to calculate its true position. As a first stab at the new direction of the channel, we can simply draw in with dotted lines a channel rising at the same rate as the rate of fall of the previous section, as long as we draw it in such a position that the transition from falling to rising is a smooth one, with a curvature not too dissimilar from that which we have seen in practice for the same share on earlier occasions, or even in the charts of the other shares.

Once this stage has been completed we can then make an adjustment up or down where the data cannot be accommodated by this first effort. In the absence of any other data, this represents our best effort at predicting the near-future direction of the channel.

We can now bring together the various strands of the estimation of channel turning points into one logical sequence of events which we should follow each time:

- Assuming we are using the calculation method where channels are based on a template derived from a moving average, we plot these channels as far as the last true point, which will be half a span back in time.
- We extrapolate the channels to the present time, i.e. the same point in time as the last data point, by drawing smooth curves, maintaining the same rate of change of curvature as was obvious in the last few true points of the channel.
- If no data points violate the channel boundaries in this extrapolated section, then we have gone as far as we can. If the extrapolation shows the latest position of the channel to be running horizontally, i.e. it is at a turning point, we draw a mirror image from this point onwards as a best guess at the new direction of the channel for the immediate future.
- If data points violate either boundary of the extrapolated channel, we adjust the extrapolated channel up or down, retaining constant depth, so as to remove the violation as far as is possible.
- If after following step 4 we have formed a turning point in the channel, then we can use the principle of symmetry to plot the new direction from the turning point onwards. If there are further violations of this symmetrical section, then it can be bent around the turning point so as to remove the violations.

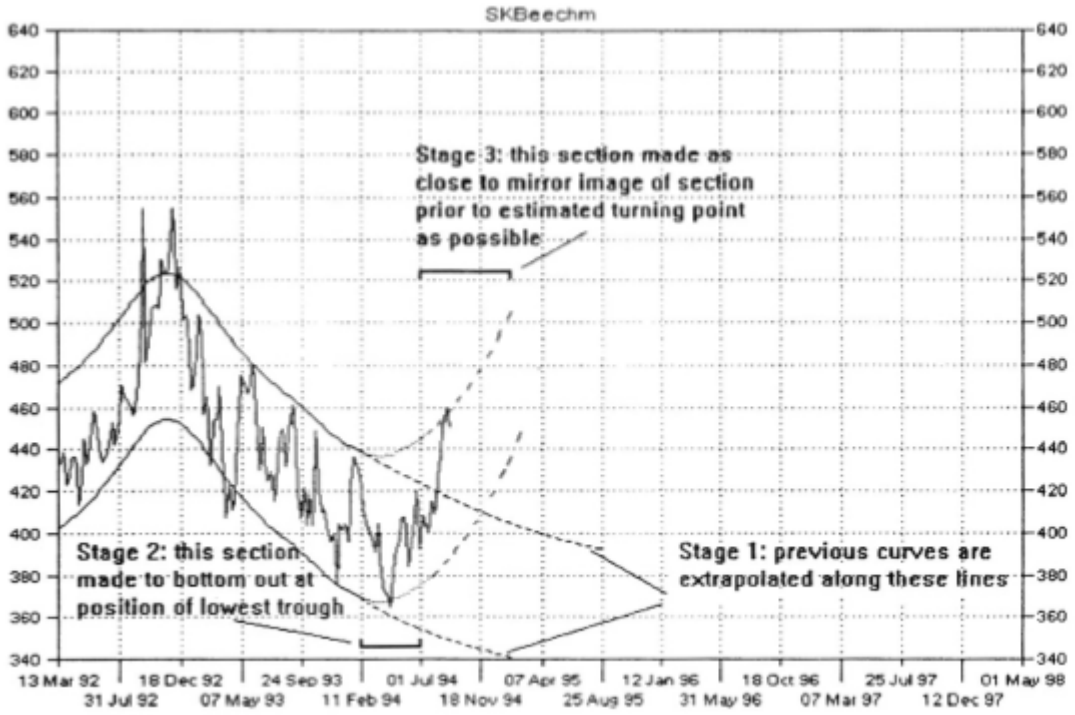
It should also be noted that channel bottoms usually (but not always) occur at or very close to the position of a trough in the share price, while channel tops usually (but not always) occur at or very close to the position of a peak in the share price. Thus a predicted turning point can be moved slightly to bring about this coincidence on the grounds that it is the most probable position for the turning point.

We now have our best prediction for the position of the channel, enabling us to take a view of the future share price movement.

If we are not using the calculated method, but have drawn the channel boundaries in manually according to the methods discussed earlier in Chapters 4 and 5, then we join this scheme at stage 2.

The procedure is shown graphically in Figure 8.23 for SmithKleinBeecham at a point where the share price was 448p on 2nd September 1994. The rate of fall of the latest true section of the channel has started to diminish. Thus, an extrapolation by eye will cause the channel to bottom out at some time in the future. Taking into account the latest price, the channel must be bent upwards to accommodate it. The bend is made about the trough price, and the channel made to be a mirror image of the section prior to this trough. This gives us an estimate of the channel direction over the next few months.

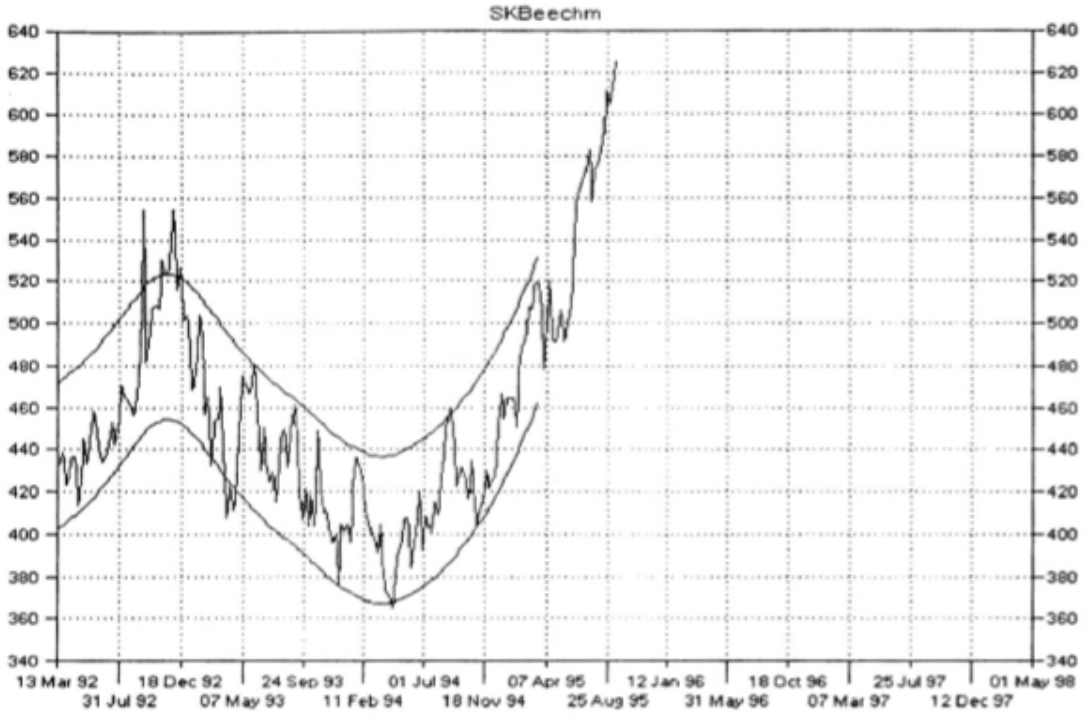
Figure 8.23 The logical sequence used to predict channels at turning points



How good a prediction this turned out to be can be seen by taking a view a year later in 1995, enabling us to calculate the real channel around the turning point in 1994. This is shown in Figure 8.24, where it can be seen that the predicted channel was a very good estimate of what actually happened.

Note that a computer program such as Microvest 5.0 will draw the extrapolated section of the channel between the last true calculated point of the channel and the present time by a curve-fitting routine.

Figure 8.24 When the actual channel is viewed from the future it can be seen that the predicted channel was a good estimate



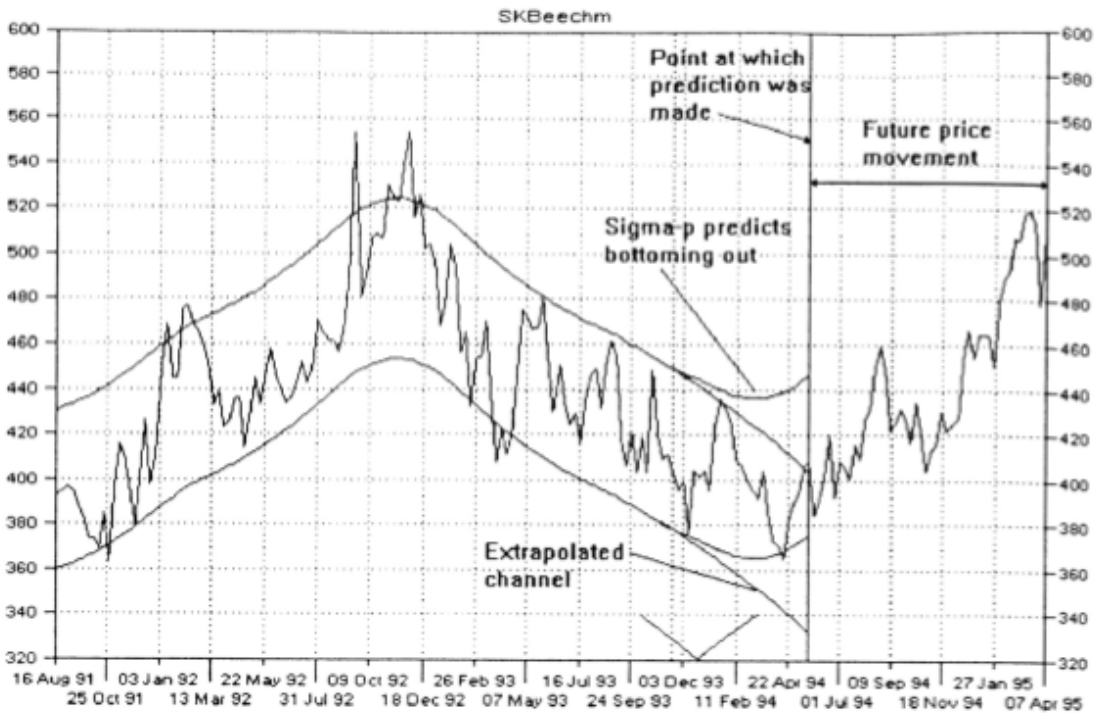
PROBABILITY METHODS

As we have seen from the many examples so far, the difficulty we face using centred moving averages as templates for channels is the necessity of filling in the gap between the last calculated point and the present day or near future. We depend heavily upon peaks or troughs occurring in this missing section to enable us to take decisions about changes in direction of the channels. The recently developed Sigma-p program uses probability methods to estimate the future course of a long-term channel. It also shows where a trend might change direction. A good illustration of its power is if we apply it to the case of SmithKleinBeecham at about the time we used in the previous example. In Figure 8.23 we found that we were unable to predict that the channel was turning until the price rose considerably above the extrapolated channel on 2nd September 1994.

Since Sigma-p predictions do not depend fundamentally on the position of peaks and troughs in this missing section, the program can make a prediction that a channel has changed direction not only much sooner than the standard method, but **before** it changes direction. In other words it predicts a turn in the channel in advance rather than after the event. The prediction takes the form of a time window in which it is probable that the turn will take place. While the investor should obviously not make an investment in advance of the turn, it means that at the point at which it is predicted, the investor can wait for the appropriate minor troughs and peaks in the share price to point to the exact time for investment.

Figure 8.25 shows the comparison between the traditional method and the Sigma-p method of channel prediction at a point just after the turn occurred. The traditional method is still showing a falling channel, with, if anything, a slight increase in the rate of descent. On the other hand, Sigma-p shows quite clearly the channel turning point, and comparison with Figure 8.24 shows how accurate the prediction was.

Figure 8.25 The Sigma-p probability program predicts a turn in the channel at a time when the traditional extrapolation shows a slightly increased rate of fall. The prediction is made on 20th May 1994 at the vertical line



The chevron represents a time window where there is an 80% probability that a turn in the long-term trend will occur, using a different method of calculation from that employed to estimate the channel. The centre of the chevron is the most likely turning point. A better view of these two predictions is obtained in the enlarged section shown in Figure 8.26.

Figure 8.26 The turning point section in Figure 8.25 is enlarged to show more detail

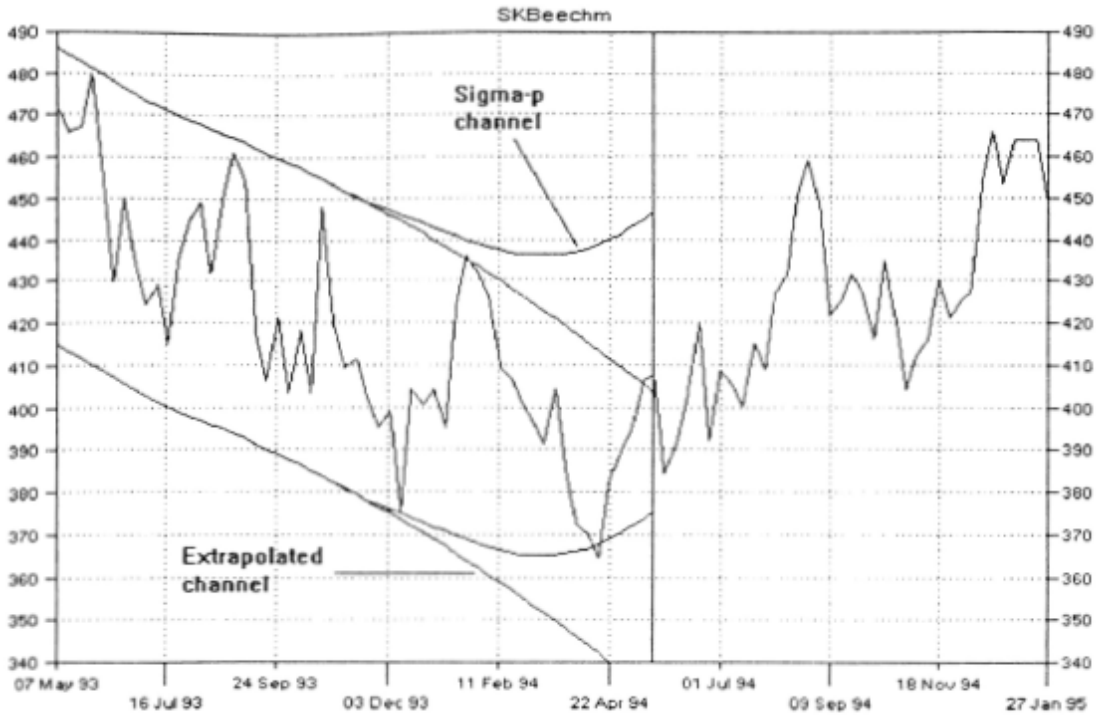


Figure 8.27 The Sigma-p probability program predicts a turn in the channel for Boots at a time when the traditional extrapolation shows a greatly increased rate of fall

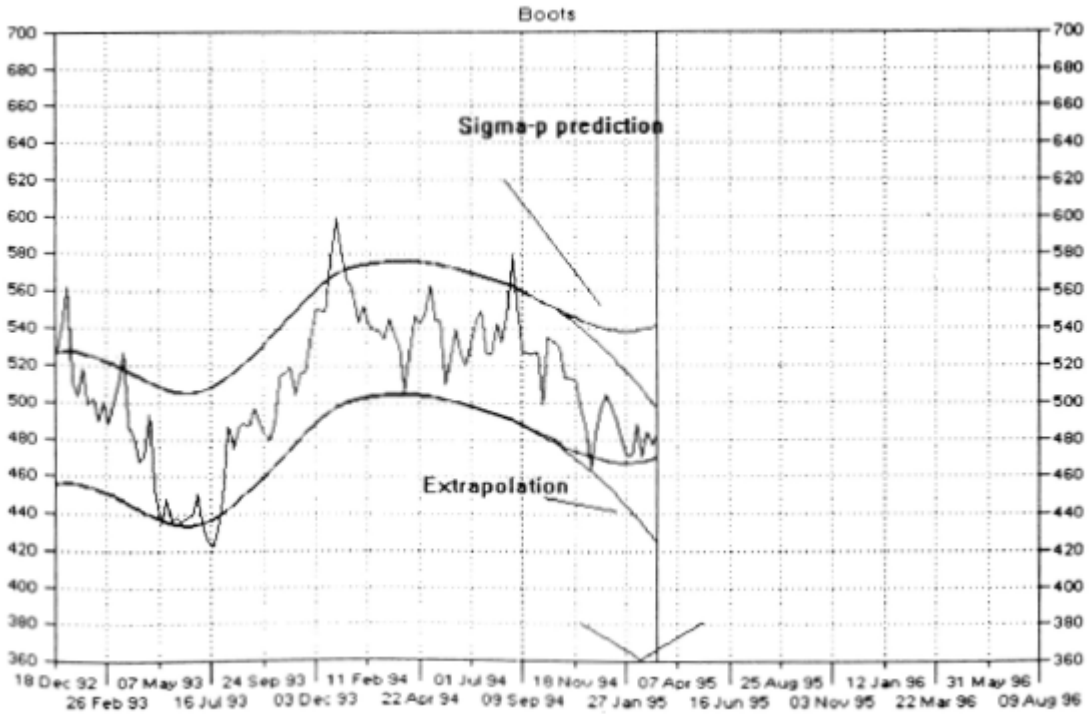


Figure 8.28 The actual channel in Boots viewed from a year later in time, showing the accuracy of the predicted channel at the turning point

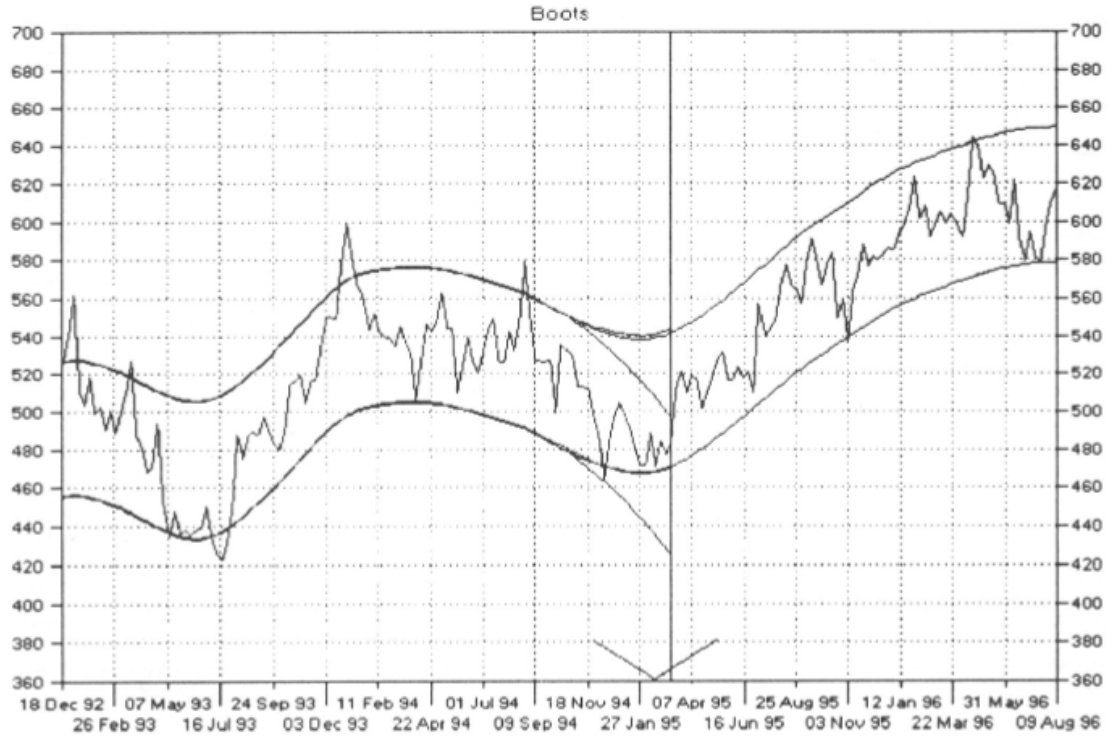


Figure 8.27 shows both the estimated channel and the estimated long-term trend turning point for Boots as at March 1995. At this point the traditional channel obtained by extrapolation of the calculated channel shows an increased rate of fall, with no indication that a turning point has been reached. The Sigma-p channel, however, shows quite clearly that the bottom has just been passed and that therefore the long-term trend is up. The alternative chevron calculation also supports this, showing that we are within the 80% probability turning band.

Figure 8.28 shows a calculation of the actual channel performed a year later in time. The channel calculated by Sigma-p is almost exactly superimposable over the actual one, showing the uncanny accuracy of a prediction made at a time when there was no indication whatsoever that the long-term trend would turn up.

Research using Sigma-p has shown that the predictability of the turning points in long-term trends in shares varies considerably from one share to another. It is possible to rank shares in a numerical order of predictability so that the investor can ignore shares where predictability is low. This decreases the risk considerably.

Chapter 9. Maintaining a Pool of Shares

As was pointed out in the first chapter, the objective of any investor should be to maximise the rate at which his investments are gaining. It was also pointed out using Grand Metropolitan shares as an example that a series of short-term successful trades, averaging about 12 weeks per trade, compounded into huge gains over the long term. In order to satisfy these two criteria, the investor has to be ready to close his position in a share which is entering the autumn of its rising trend, and immediately move into another share for which spring is just blossoming. As well as maintaining a very close watch on the share or shares in which he is currently invested, the investor therefore has to maintain a watch on these shares from which the next opportunity will arise. This task is vitally important if the momentum of investment is to be kept going. Fortunately for most of the time it does not require quite the constant and extensive analysis that must be applied to the share prices of those investments that are being held. By the time the current investment is appearing to be ready to terminate, then the possible selections should have been reduced to just a few. It is to these few that a great deal of attention then has to be paid in order to select the one share that will carry our hopes for the next stage of our investment. Note the important fact that is stressed in Chapter 10. We should apply no more than an eighth of our capital to any one share. Under no circumstances should we deviate from this rule. It is very rare for the market to pass through situations where the next investment cannot be found. Although the week following the crash of 1987 would have been one of the few times when the investor should have been totally disinvested, a week or so after that he would have been embarrassed by the enormous number of opportunities for making huge gains in a very short period of time.

A list of between 50 and 100 shares is perfectly adequate for most periods in stock market history as a pool from which prime selections can be taken. This list is not static, and as time goes on some shares will be deleted from the pool and new ones brought in. For those investors with

computer systems and a database that includes, say, the FTSE100 constituents plus any other shares which are present in the Traded Options list, then maintaining a watching brief on these is a task that takes very little time. For those investors without such a capability, the work necessary to maintain charts of share prices will make it more attractive to minimise the number, keeping this nearer to 50 shares than 100. In order to keep the amount of work to a minimum, it is only necessary to keep track of weekly closing values at this stage. It is only when the moment is approaching for selling your current holding that you could consider moving to daily data on your few prime selections in order to make a final choice, but even this is not vitally important. As we showed in the last chapter, using daily data should normally improve your profit from a trade by a few percentage points, but it is debatable whether the extra amount of work necessary to track daily data rather than weekly data makes this really worthwhile if a computer system is not available.

The major criteria upon which to base your selections for the main pool should be:

- Volatility – good swings in price for all types of cycles, short, medium and long term. This is reflected in a greater depth of the channel encompassing these cycles of interest.
- Good evidence of cyclical behaviour.
- Low amount of random, week-to-week or day-to-day movement.
- Evidence that cycles of less than one year periodicity are not decreasing in importance.
- Troughs in cycles of more than one year periodicity are approaching.
- The main requirement for selection from the main pool into the prime pool should be:
- A trough in one or more cycles of less than one year periodicity is approaching. This will allow us to make an investment at the correct time in cycles which will gain the maximum over the typical investment period of 12 weeks.

In order to give a flavour of the appearance of a reasonable number of share price charts, 24 charts are presented here in Figures 9.1-9.24. They are taken from the FTSE100 constituents plus the mid-250 constituents. The timescales are not all the same, since some shares start at an earlier time than others. The scales have been adjusted so as to allow the share movement to fill about half to three-quarters of the width of the chart. **The time axis is marked in weeks rather than with a date**, since this allows the wavelength of various cycles to be more readily obtained. A good enough approximation of the number of years covered by each chart is obtained by dividing the number of weeks to the end of the data by 50 rather than 52. Since the charts all terminate at the same position, in late October 1996, the crash of 1987 is at about week 250.

We shall comment on each individual chart, so that you will see which of these would be selected for our main pool. Note that because this selection is made now, at the time of writing, there is no implication that the same shares would be selected for the main pool at some time in the future. The main features of a share which made it a good candidate at a certain point in time will almost certainly change, and next month or next year it might not fulfil the requirements. The main pool must be kept under constant revision.

All the shares are on a rising trend at the time of writing. In a broad sense therefore the shares are behaving similarly.

A closer look at the various charts does show up a difference when it comes to short-term random movements. Some shares have an obviously greater random content than others. On the scale of the charts, which are covering periods of up to just over 700 weeks, the fine detail of this random movement is not discernible. The presence of such random movement is indicated by a fuzziness of the share price movement. These shares are never standing still, and an investor monitoring the movement on a day-to-day basis will nearly always see a change in price. As two extreme examples, compare the random week-to-week movement of British Telecom (Figure 9.6) with the much lesser movement in Dixons (Figure 9.8). Note also that a share can change character over a number of

years, from a low amount of random short-term movement to a much larger amount or vice versa. An example of this is Standard Chartered (Figure 9.21). Although in general we should ignore shares in which the day-to-day or week-to-week random movement is high, we can make an exception where there are particularly strong cycles present.

Moving on to slightly longer cycles than the random movement, we should notice that the fuzziness in the GUS share price (Figure 9.12), for example, is not as densely packed as in some other shares, the reason being that the GUS share price contains a great deal of short-term cyclical movement in addition to a small amount of random movement. For a good example of short-term cyclical movement uncluttered by too much random movement, the Land Securities price (Figure 9.14) between weeks 300 and 500 is an excellent example. Again, the principle of variation in amplitude of cycles is well illustrated, since these short-term cycles have disappeared between weeks 500 and 600. Good examples of shares which have maintained their short-term cyclical behaviour are Pilkington (Figure 9.16) and W.H. Smith (Figure 9.20).

These comments so far should lead you to the conclusion that although there has been some underlying upwards momentum given to the vast majority of shares over the last five to ten years, each share has its own character, although each share's character is undergoing change. Some shares are very random, some show short-term cyclical behaviour, some medium-term cyclical behaviour, some long-term cyclical behaviour, and some show mixtures of some or all of these effects. In some shares the combination of many of these effects puts them in a favourable position for investment almost immediately, while in others the opposite is the case.

It is useful to categorise the shares by awarding them from one to three stars for increasing prominence of random and cyclical movement. The cyclical movement can be subdivided into very short term, say up to 20 weeks' periodicity, short term from over 20 weeks to about one year, medium term from over one year to just over two years, and long term over two years. It is not necessary to spend a great deal of time doing this, and a rapid impression of the various cycles can be obtained by looking at

the distances between successive troughs of waves of good amplitude. The most recent history is the most important, and if a cycle which was present at the start of the chart is not apparent at the end of the chart, which in every case is October 1996, then it should be given only one star. It is not intended that the trough-to-trough distances are measured accurately, but just mentally put into the appropriate time slots. Draw a channel in your mind's eye to accommodate these fluctuations. The very approximate depth of the channel in pence which you can get from this exercise can be used to grade the amplitude of the various cycles to award a star rating. The deeper the channel, the greater the potential for profit from a share price move from the lower boundary to the upper boundary, and therefore the greater the star rating. You may wish to see if you obtain similar results to those shown in Table 9 .1. You may not agree entirely with these, since in a rapid scan such as this a certain amount of subjectivity prevails. The most important objective of this rapid scan is to draw our attention to those shares which are worth a more detailed analysis.

As can be seen from the table, most of the charts merit only one star for their long-term cyclicality of over two years' periodicity. The use of this column is more to draw attention to the very few shares that achieve two or three stars. These will offer above average opportunities at some time in the future when the long-term cycle bottoms out and happens to coincide with an upswing in shorter cycles. For immediate investment the long-term cyclicality is of little importance.

Some of the shares can be eliminated immediately from our pool on the grounds of general lack of cyclicality. These are BOC, GUS, Hillsdown, Standard Chartered and Thorn-EMI (Figures 9.4, 9.12, 9.13, 9.21 and 9.22). This does not mean of course that we cannot make profits in these shares. It is simply that for our purposes we can find very much better vehicles for investment in the remainder of the shares in our list.

Some shares are outstanding for their mixture of all types of periodicity, for example Land Securities, Pilkington and United Biscuits (Figures 9.14, 9.16 and 9.24). These must be prime candidates for a much more detailed analysis, remaining on our list for a long time to come even if the analysis

shows that they are not immediate investment opportunities. Even though they do not merit two stars in the long-term cycle column, then since we have said that this is of little consequence, we can add Bass, British Telecom, General Accident, Legal & General, Reckitt & Colman, Redland and Unigate (Figures 9.3, 9.6, 9.9, 9.15, 9.17, 9.18 and 9.23), since all of their other cycles are featured strongly.

Our investment objective is to concentrate on cycles of up to one year's periodicity, which means cycles where the trough-to-peak rise time is up to 26 weeks. As discussed for the Grand Metropolitan case (Chapter 1) we aim to stay invested on average for about 12 weeks in any one share, so shares which have three stars in both the column for cycles up to 20 weeks and the column for cycles from 20 weeks to one year are of interest. This will give us a manageable number of 10 shares. These are Bass, British Telecom, General Accident, Land Securities, Legal & General, Pilkington, Reckitt & Colman, Redland, Unigate and United Biscuits.

Since these shares contain a variety of cycles from very short wavelengths up to one year, we will be able to aim for situations where two or even three cycles are about to reach their troughs. As we have stated earlier, when this happens, the upward momentum given to the share price is additive, consisting of the sum of the rises that each of the two or more components would make over the following few weeks individually. Conversely, of course, any longer-term cycle that is about to fall from that point in time will have an adverse effect, subtracting from the rise that would otherwise be made. The longer the periodicity of this adverse cycle, the shallower is its fall, so that over a short term of a few weeks or months, it may not fall very much. It is for this reason that, although it is extremely useful to be able to time an investment when a longer-term cycle of say four years or more is about to bottom out, its effect over a few weeks or months is usually not very large, and in the opposite sense of shorter-term cycles dictating that an investment be made the negative effect of such a long-term cycle topping out should be ignored. A good illustration of this is the Reckitt & Colman share price (Figure 9.17). An obvious outer channel is going through a very long-term top. Even so, the depth of this channel is such that price rises within it will show

considerable gains of 30% or more if good timing is achieved. If this approach is not made, the investor will be forced into the position of being dictated to by the longer-term cycles in the market, and will not begin to approach the gains we discussed in Chapter 1.

Table 9.1 Strong cycles present in leading shares. Cylces are graded on a one to three star basis, one star being weak and three stars strong

	Random movement	Up to 20 weeks	20 weeks to 1 year	1 year to 2 years	Over 2 years
1 Abbey National	**	**	**	*	*
2 Barclays	*	**	***	***	*
3 Bass	*	***	***	***	*
4 BOC	*	**	**	*	*
5 British Airways	**	**	**	**	*
6 British Telecom	**	***	***	***	*
7 Cable & Wireless	*	**	***	***	*
8 Dixons	*	***	**	**	**
9 General Accident	*	***	***	***	*
10 Glaxo-Wellcome	*	*	***	***	*
11 Guardian Royal	**	***	***	***	*
12 GUS	**	**	*	*	*
13 Hillsdown	**	***	*	*	**
14 Land Securities	*	***	***	***	**
15 Legal & General	**	***	***	***	*
16 Pilkington	**	***	***	***	**
17 Reckitt & Colman	**	***	***	***	*
18 Redland	**	***	***	***	*
19 Rolls-Royce	**	***	**	**	*
20 W.H. Smith	**	***	***	**	*
21 Standard Chartered	*	**	**	**	*
22 Thorn-EMI	*	***	**	*	*
23 Unigate	**	***	***	***	*
24 United Biscuits	**	***	***	***	**

Having now reduced our original 24 shares down to 10, they should be analysed carefully by the techniques of channel analysis and moving

averages. Readers may care to transfer these charts to tracing paper and draw channels on the traces. It is permissible to draw as many channels as you like until the outer channel is reached, as long as each channel is enclosed by another one such as to obey the rules about channel construction mentioned in earlier chapters. It is unlikely on the amount of data presented in these figures that more than four such nested channels can be drawn, and probably two channels will be adequate for most of the charts. Even without doing this, it is still possible to make some brief, preliminary observations about the investment potential of each of these shares at the time of writing (25th October 1996) as follows:

Bass (Figure 9.3)

The 53-week channel appears to have just topped out by virtue of hitting the upper boundary of a very long-term channel. The price is now at the bottom of the 53-week channel, and can be expected to bounce up to the upper boundary, giving a potential profit of about 70p. Once this short-term movement is over, the share will be one to avoid for some time to come.

British Telecom (Figure 9.6)

The 53-week channel has just passed its low point, with the price having fallen to the newly rising lower boundary. A trough is yet to be formed, but once one has been formed at the boundary, this should be the start of a good rise of 70p at the very least.

General Accident (Figure 9.9)

The price has just risen dramatically and is now at the upper boundary which is still rising. It is now too late to buy into the share, but it would be held until a stop loss penetration (see Chapter 10) signals time to exit.

Land Securities (Figure 9.14)

The price bounced off the lower boundary of the 53-week channel some weeks back. It is now too late to buy into this share, but we would expect a rise of about 50p or so before a stop loss is triggered.

Legal & General (Figure 9.15)

This is a case where insurance shares have all behaved in unison. The comments above for General Accident apply in exactly the same way for Legal & General.

Pilkington (Figure 9.16)

The 53-week channel has topped out, and the price is now falling towards the lower boundary which is itself now falling. The share should have been sold many weeks ago as a stop loss would have been triggered. It is unlikely that a buying point will occur for the best part of a year from the present time.

Reckitt & Colman (Figure 9.17)

There are signs that the 53-week channel is topping out, with the price now approaching the upper boundary. Certainly not a buying position, but if the share is held there might be a further small rise to be obtained as the price makes a last effort to reach the upper boundary. It would have to be watched very carefully with a stop loss in order to exit at the first sign of an adverse trend.

Redland (Figure 9.18)

The channel is rising strongly, with the price some way above the lower boundary. We would have to wait for a small fall towards the lower boundary with the formation of a trough, at which time there will be a good buying opportunity. A substantial rise should follow.

Unigate (Figure 9.23)

In this case the channel has almost certainly topped out, with the price at the upper boundary. Expect a fall from this point. It will be a long time before this share shows a good buying signal.

United Biscuits (Figure 9.24)

The channel is falling rapidly, with the price contained in the middle of it. It is impossible to predict from the present data when the channel will stop falling. The share should not be bought until a turnaround is fully substantiated.

These comments about the 10 shares should serve to show the features we are looking for when determining if a share is to be a good investment almost immediately, in the near future, or perhaps not for some considerable time in the future. As you have more practice in looking at more charts, you will get to a position when just a glance at a share price chart will enable you to decide whether it is useless for current investment purposes or worth a much more detailed analysis.

Always adopt the view that if you are not sure whether a particular share is at the right point in its development to be considered to be the next investment opportunity, then there will always be another share about which you can be sure. If you cannot find such an alternative immediately, then wait until you can, rather than invest in a situation in which you do not have 100% faith that you are making the correct investment.

Figure 9.1 Abbey National share price

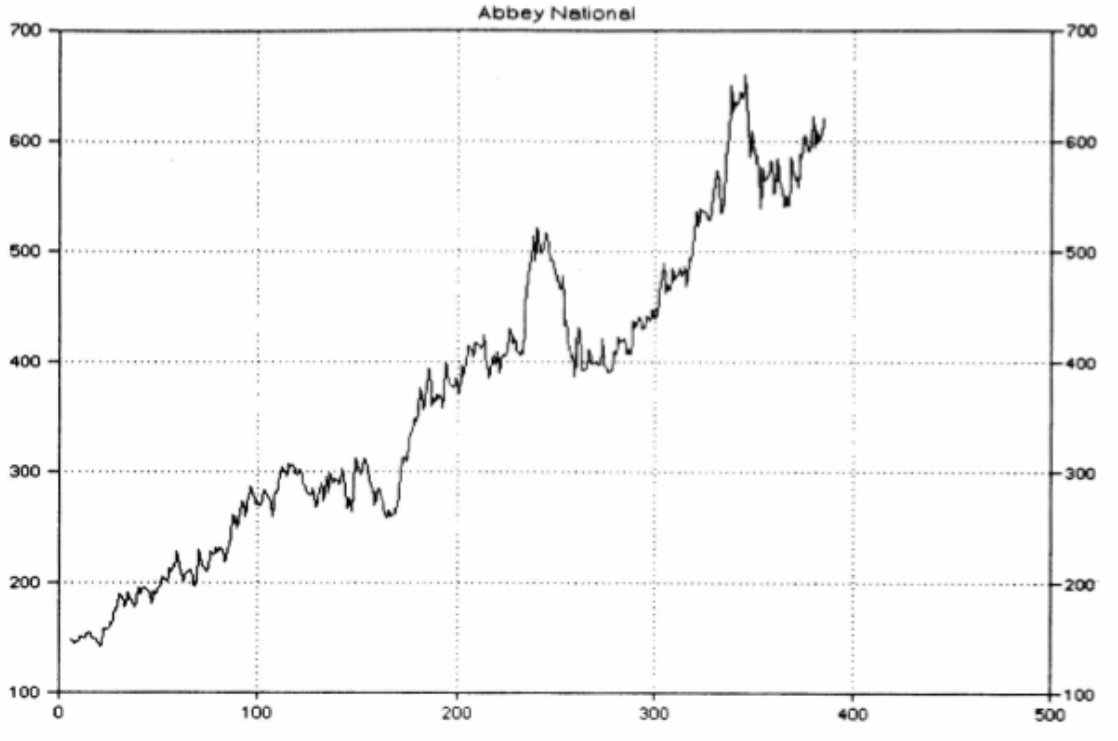


Figure 9.2 Barclays Bank share price

Figure 9.3 Bass share price

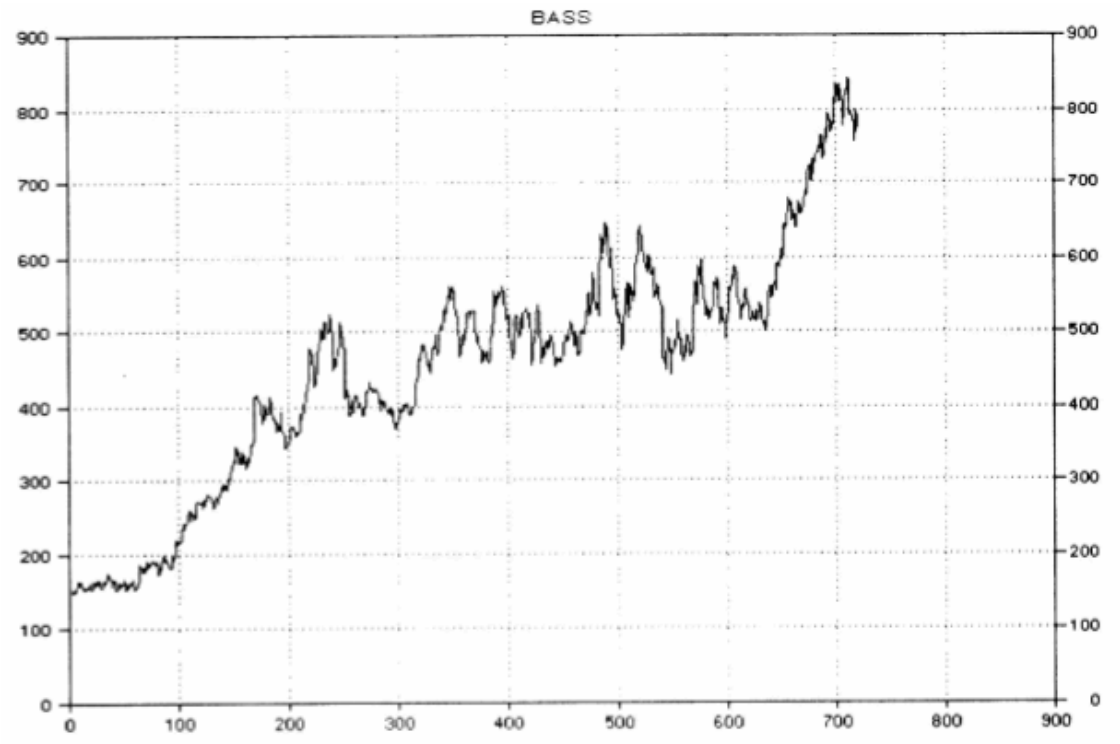


Figure 9.4 BOC share price

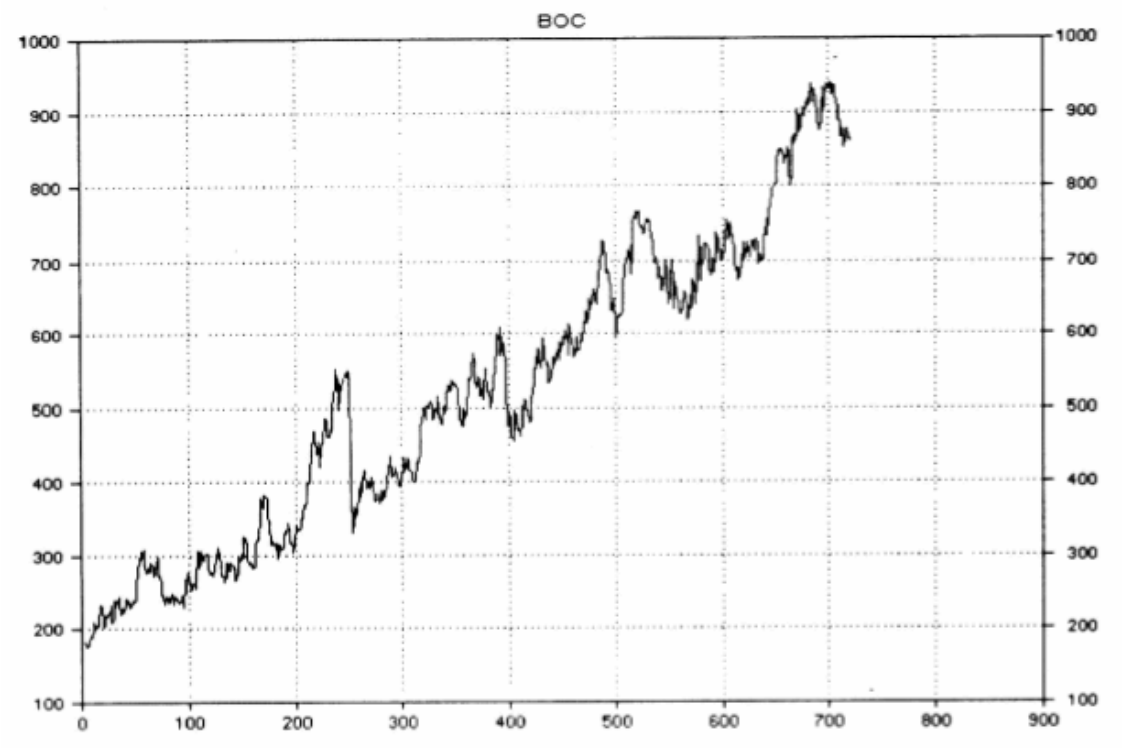


Figure 9.5 British Airways share price

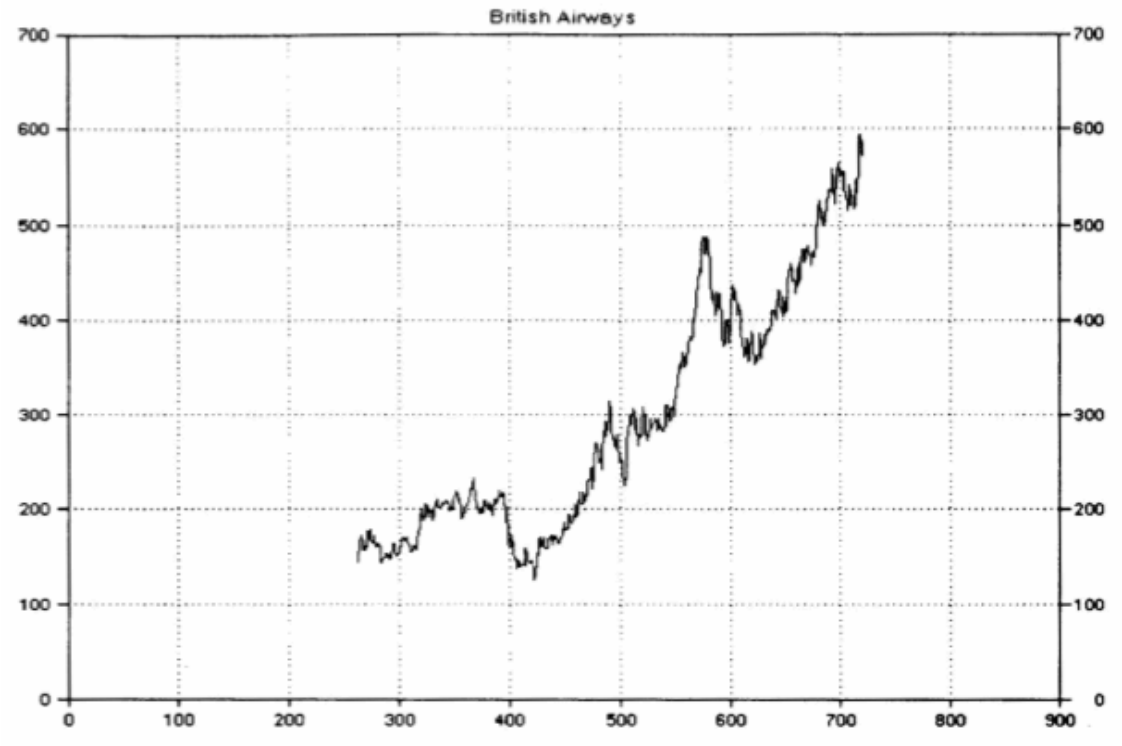


Figure 9.6 British Telecom share price

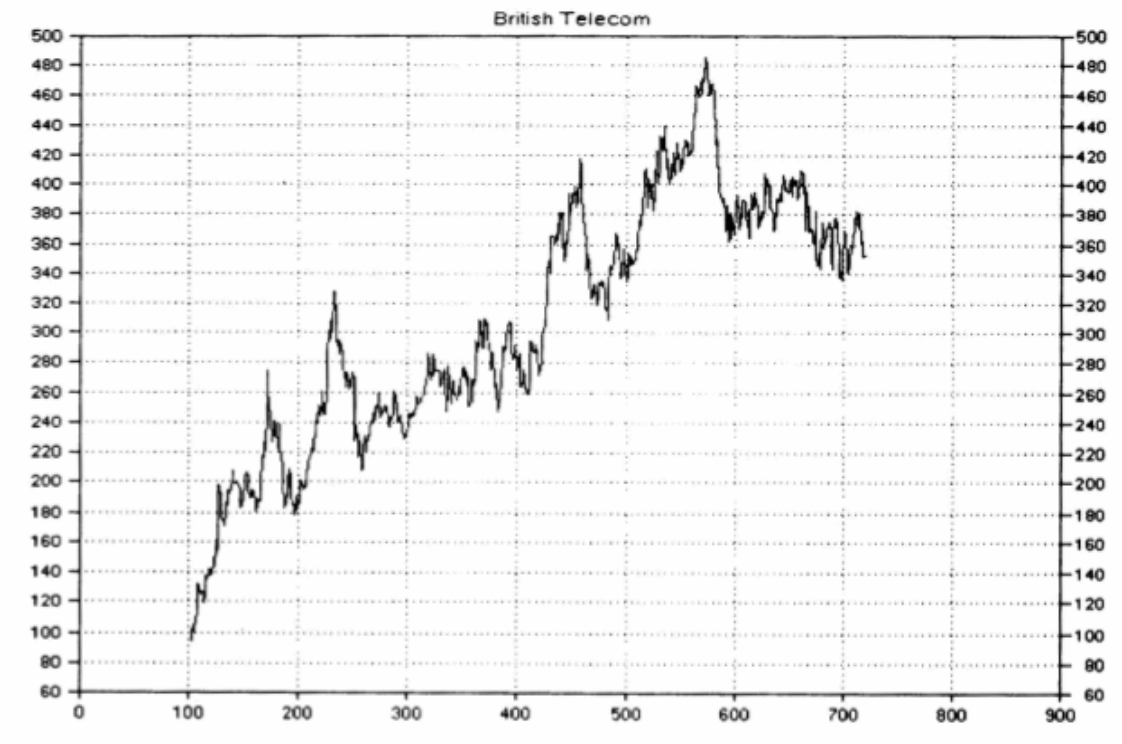


Figure 9.7 Cable & Wireless share price

Figure 9.8 Dixons share price

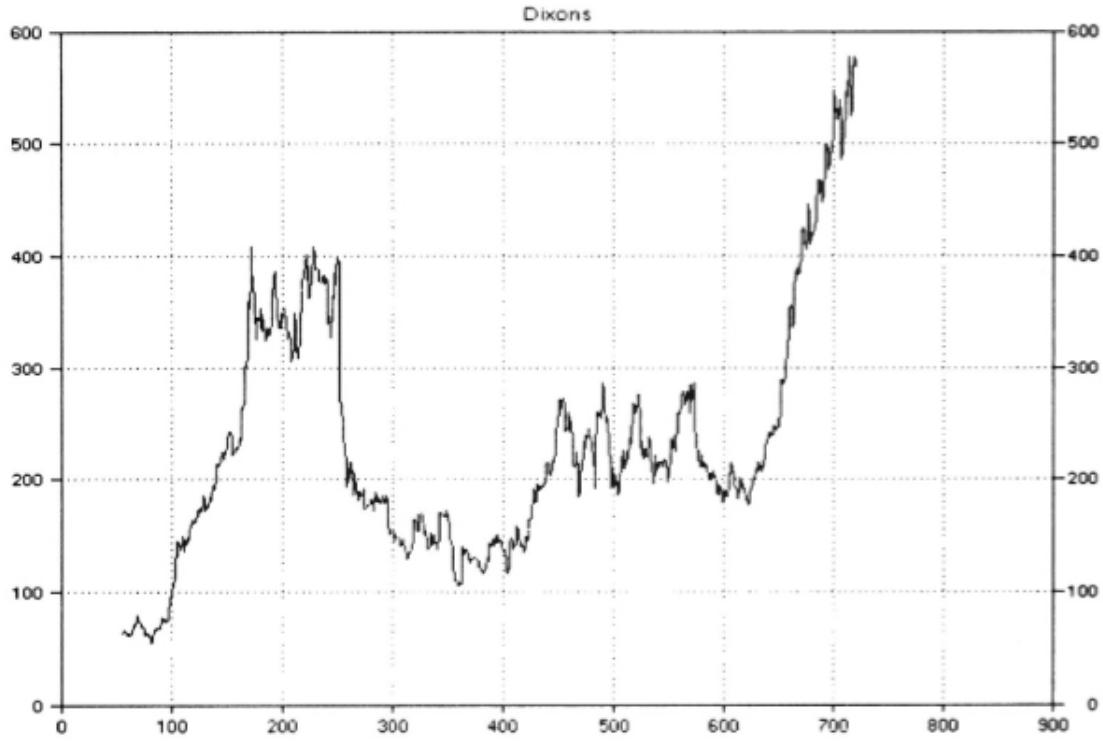


Figure 9.9 General Accident share price

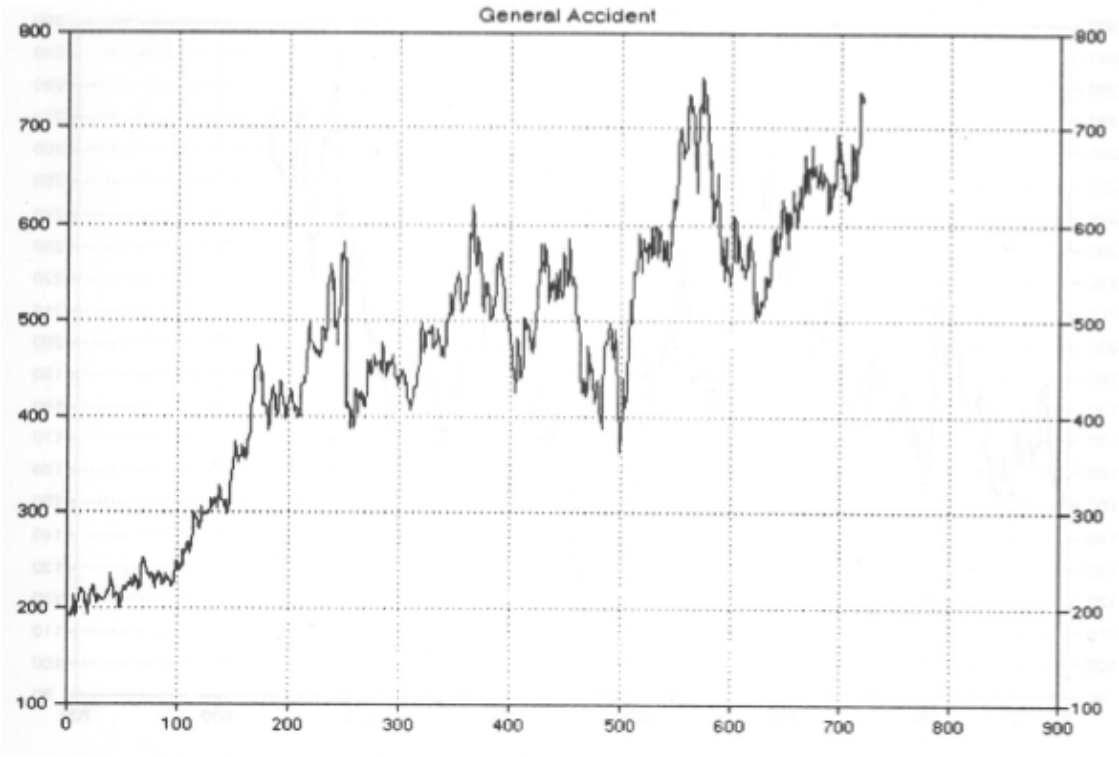


Figure 9.10 Glaxo-Wellcome share price

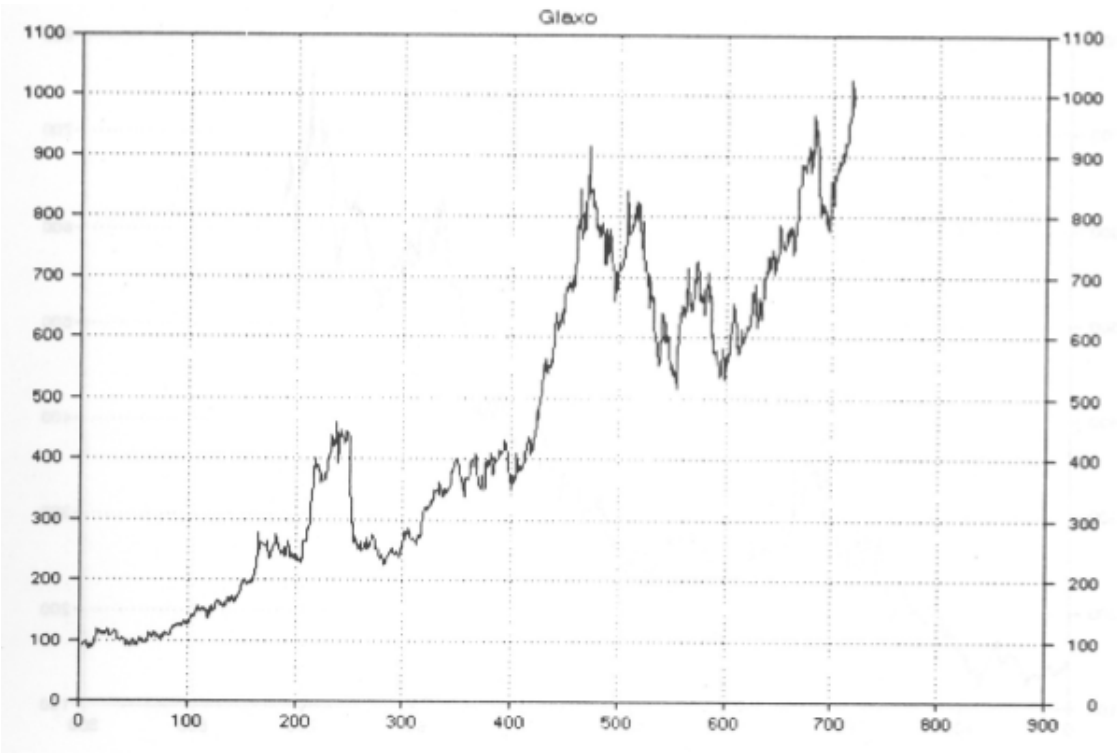


Figure 9.11 Guardian Royal Exchange share price

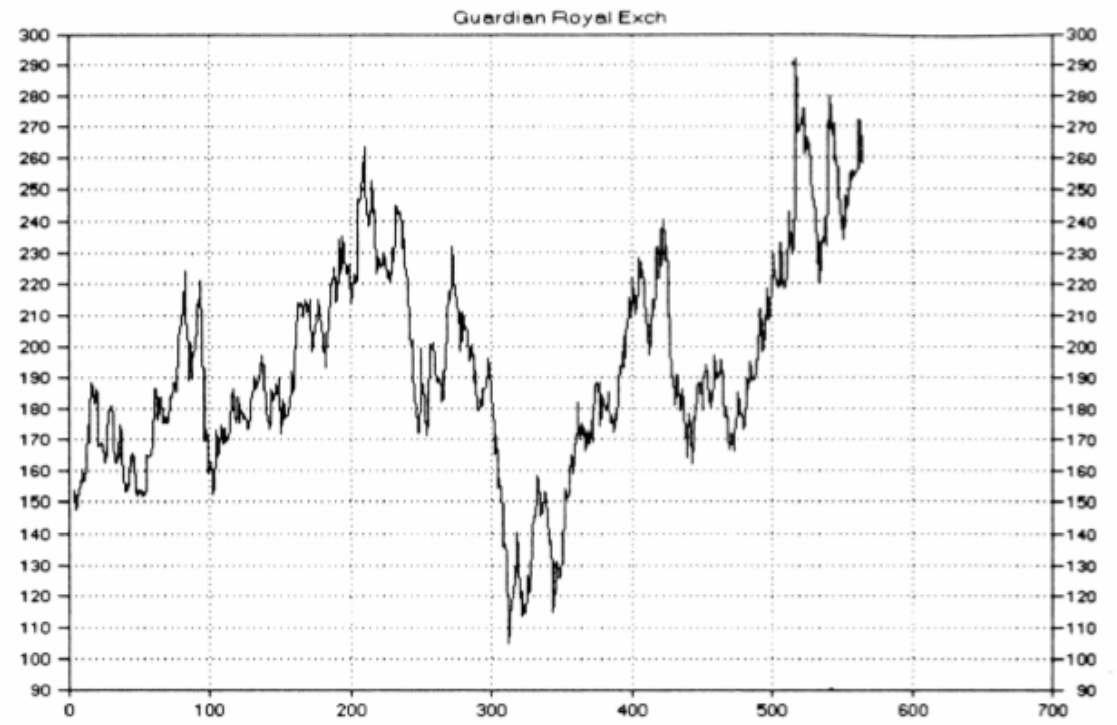


Figure 9.12 GUS share price

Figure 9.13 Hillsdown share price

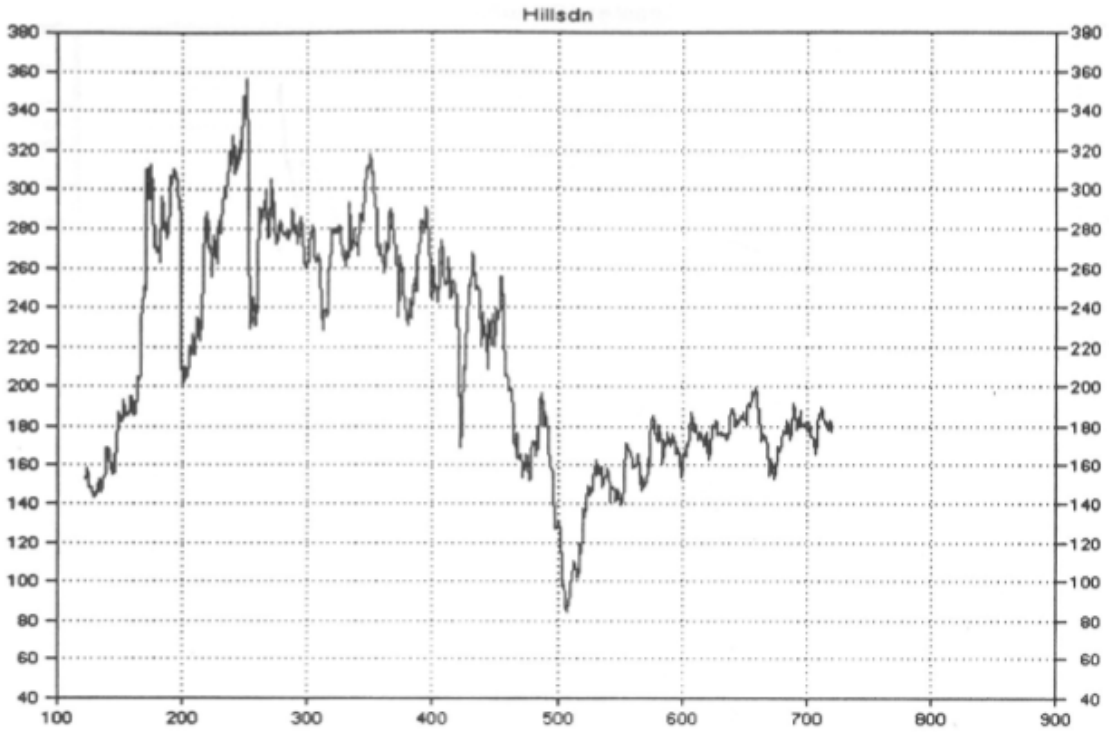


Figure 9.14 Land Securities share price

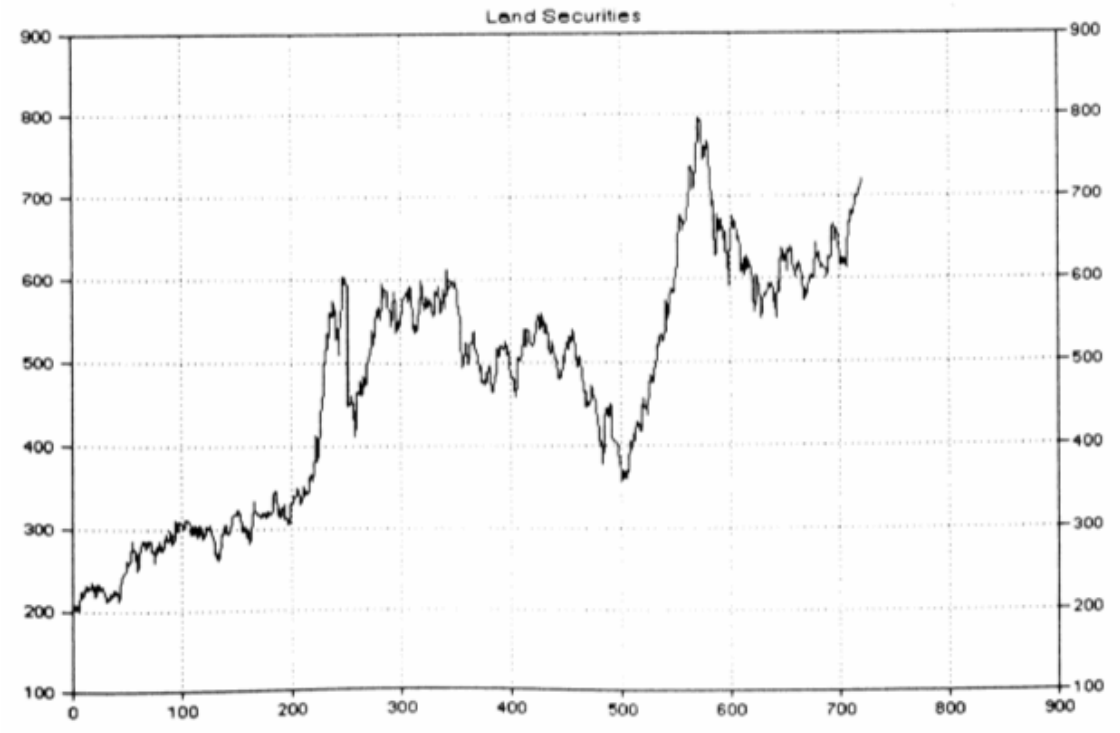


Figure 9.15 Legal & General share price

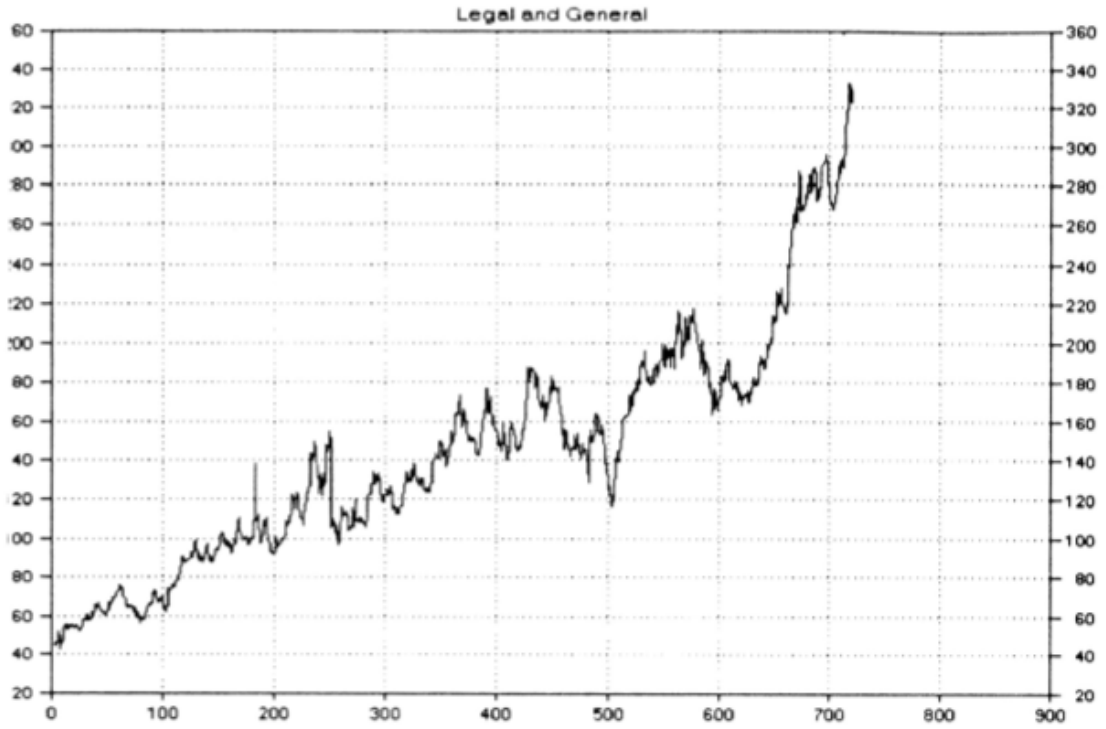


Figure 9.16 Pilkington share price

Figure 9.17 Reckitt & Colman share price

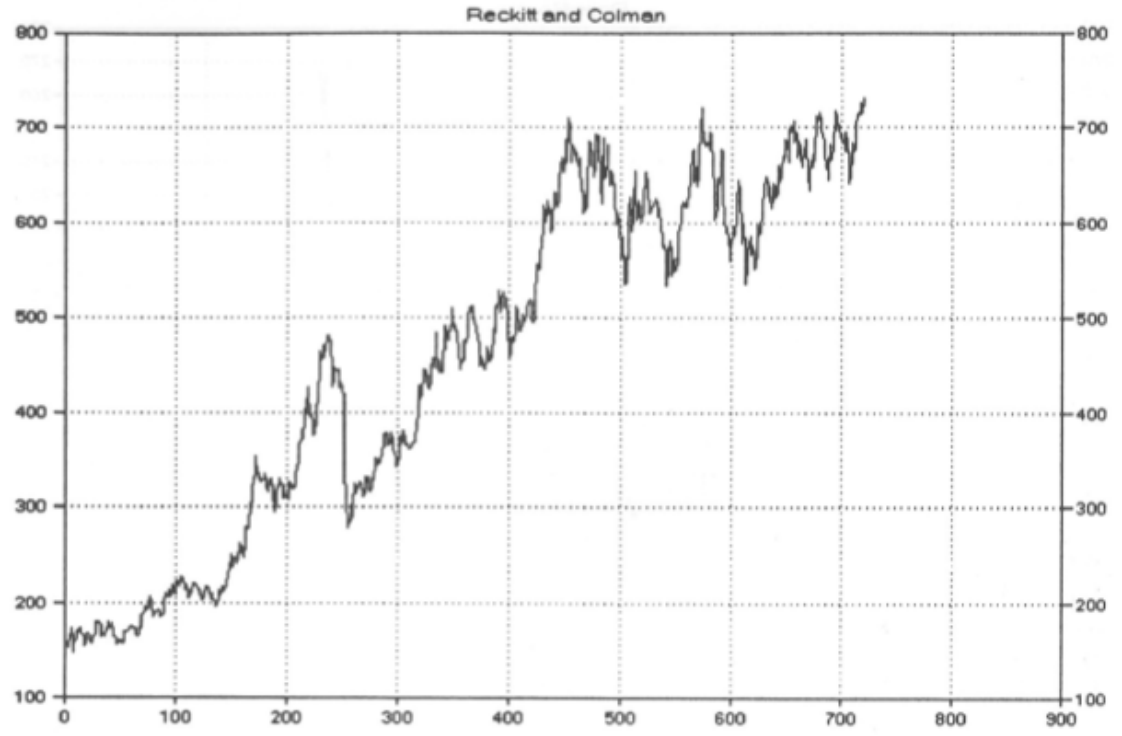


Figure 9.18 Redland share price

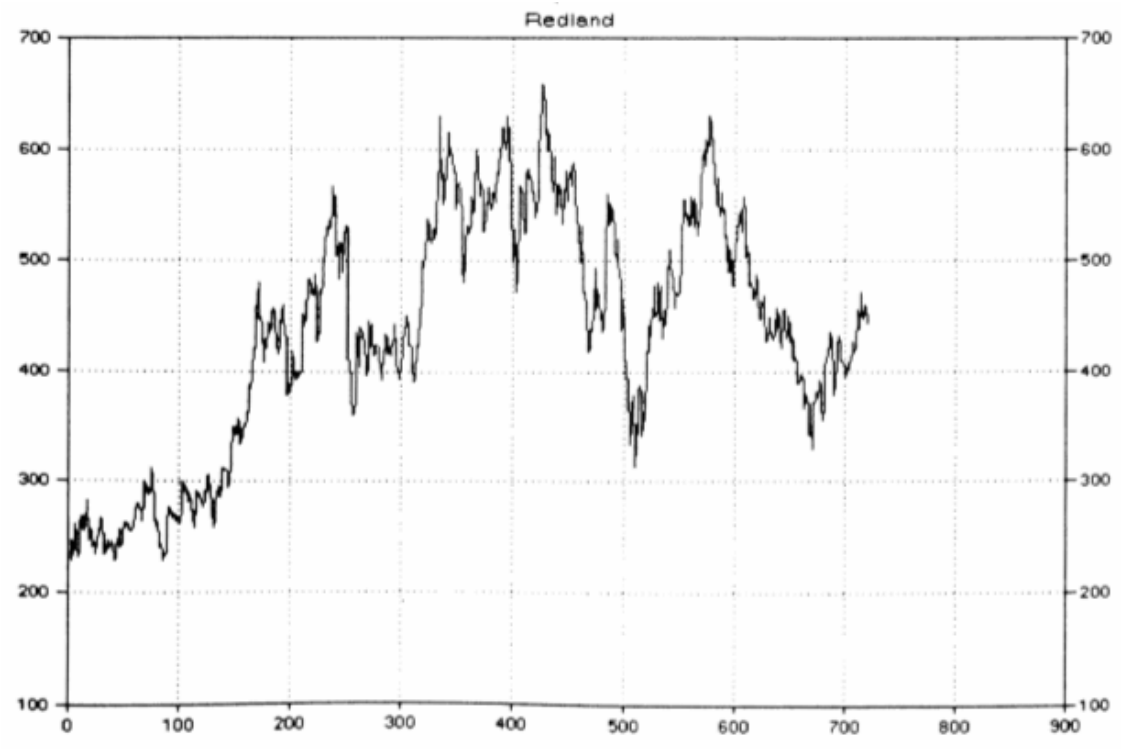


Figure 9.19 Rolls-Royce share price

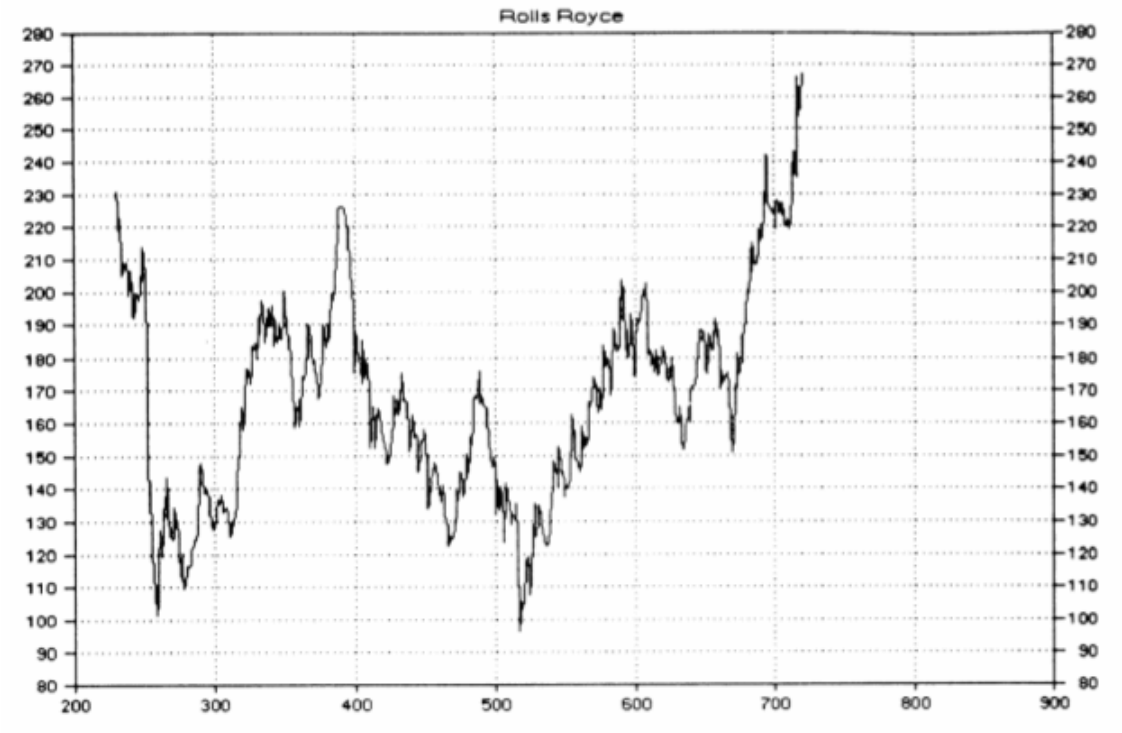


Figure 9.20 W.H. Smith share price

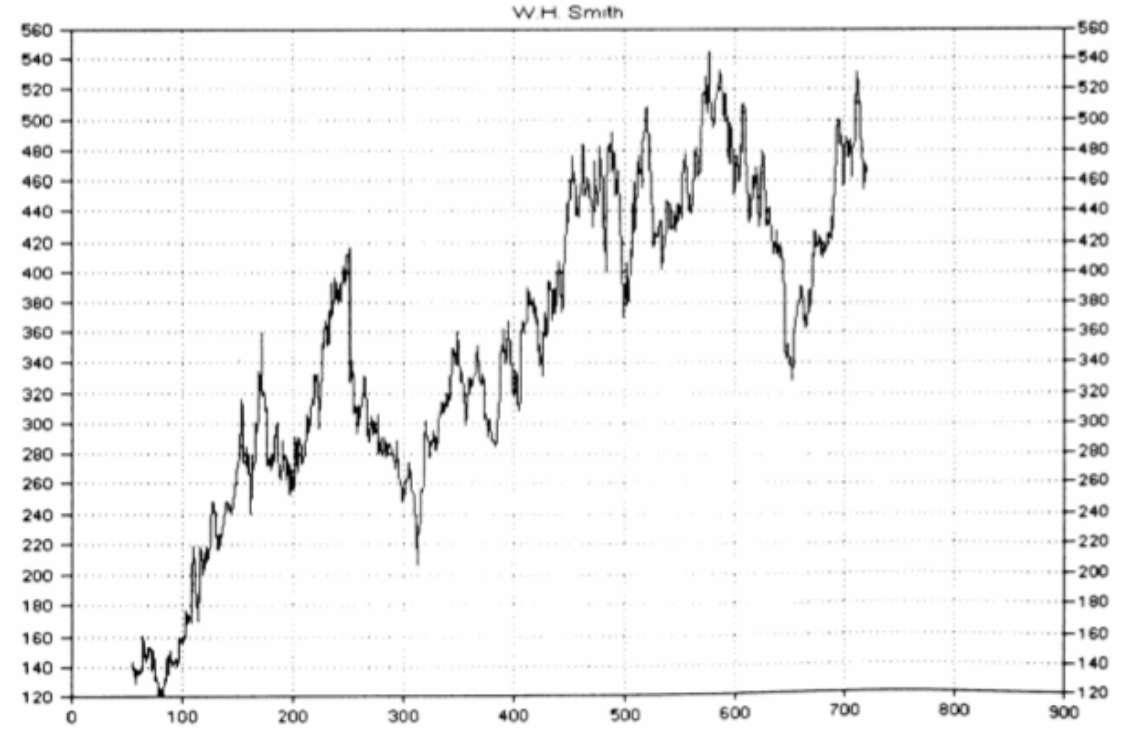


Figure 9.21 Standard Chartered share price

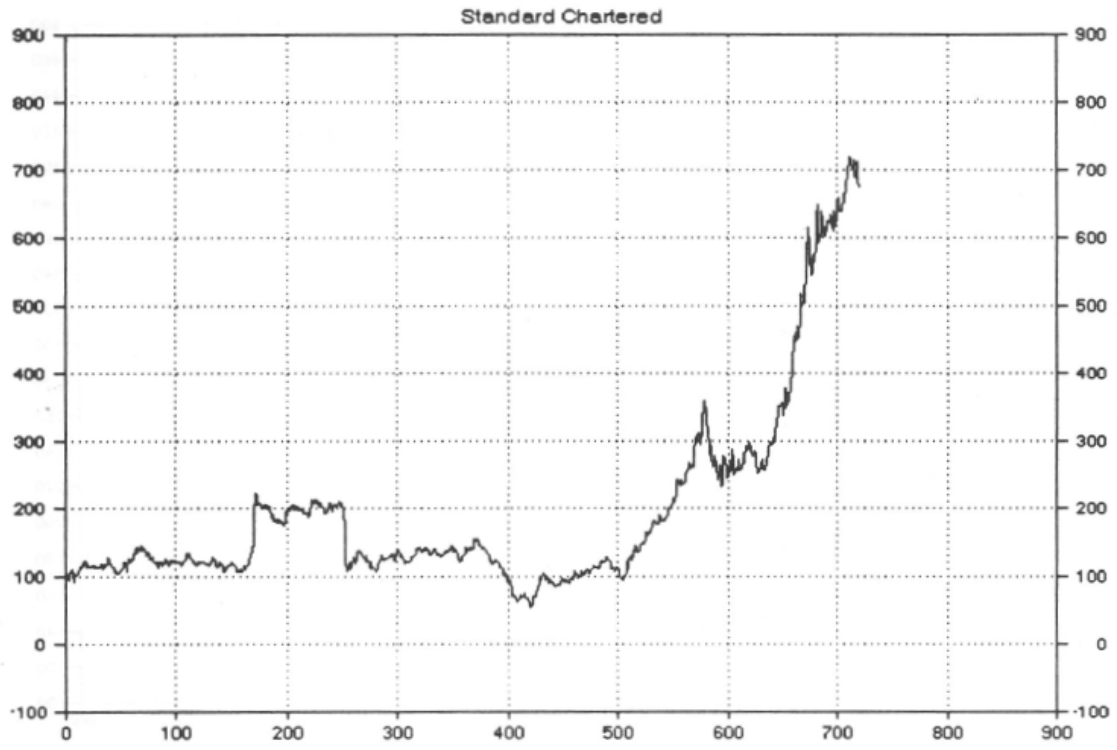


Figure 9.22 Thorn-EMI share price

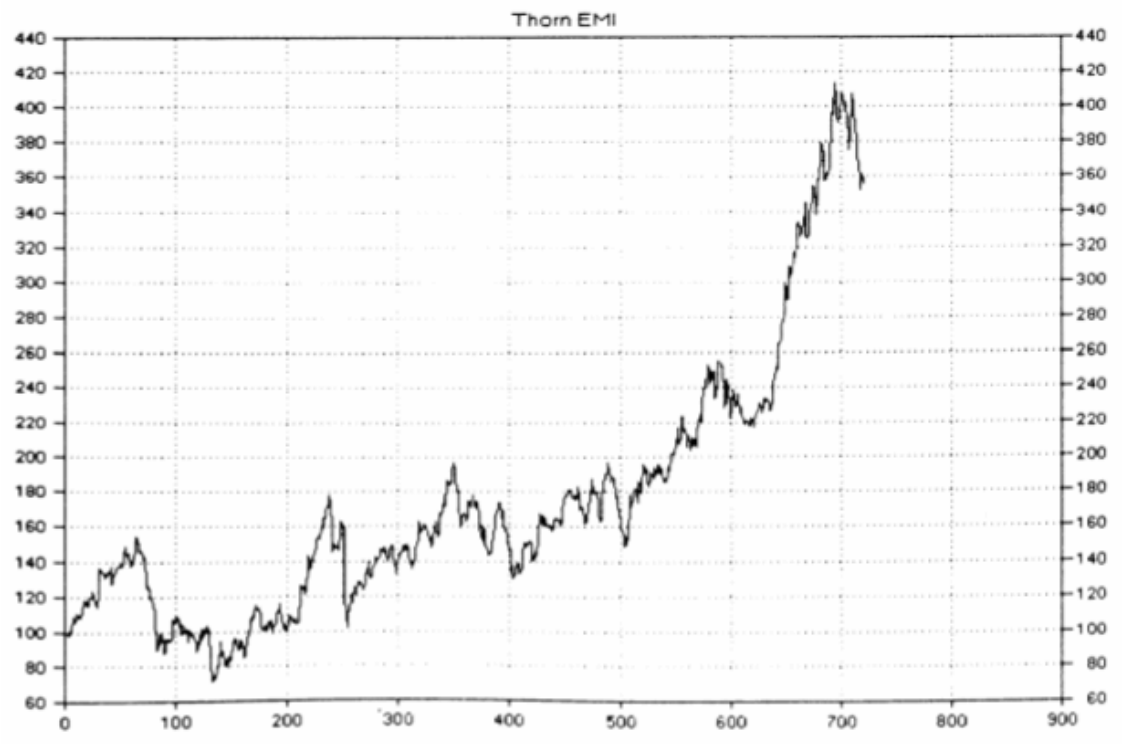


Figure 9.23 Unigate share price

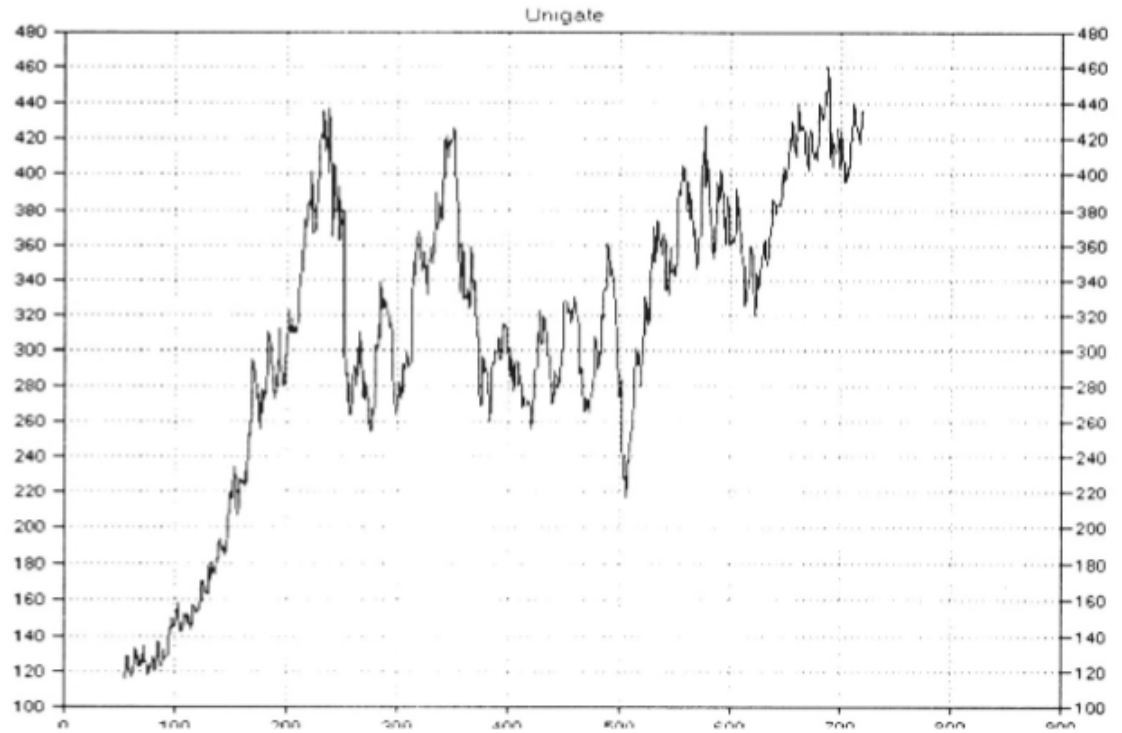
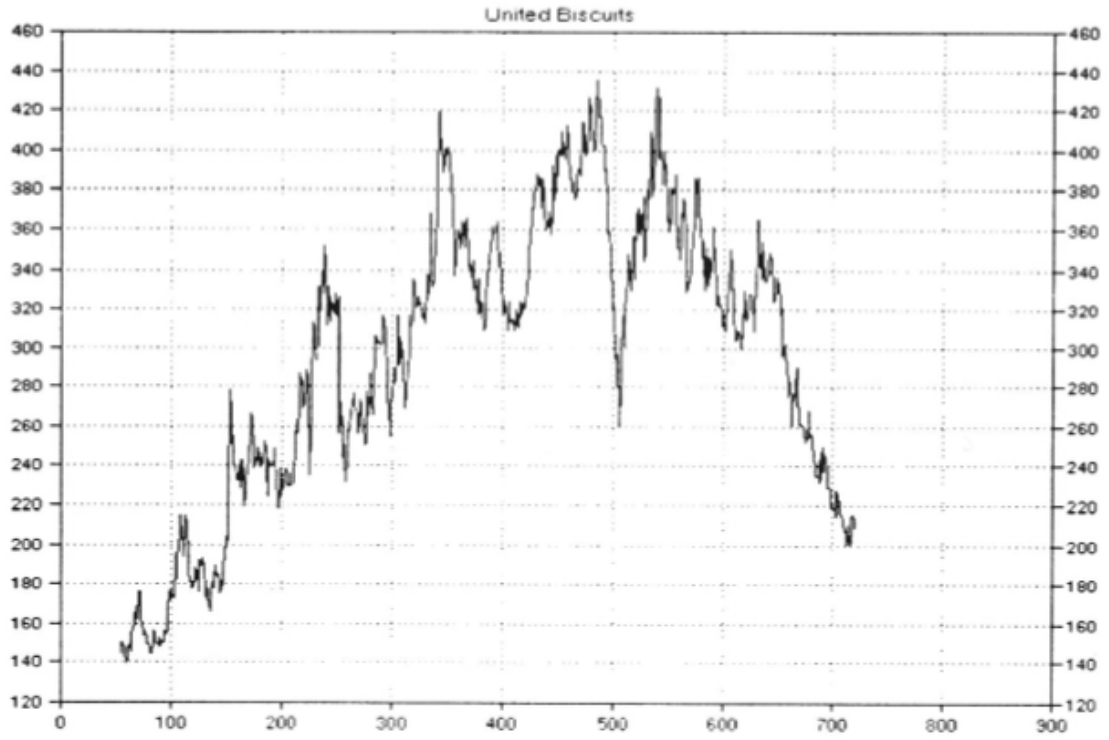


Figure 9.24 United Biscuits share price



Chapter 10. Staying Disciplined

The laws of probability are such that as more transactions are carried out, the results approach the ideal ever more closely. Thus the tossing of an evenly balanced coin may result in five or even more consecutive heads being produced, but if the coin is tossed 1000 times, the results will be close to the theoretical 500 heads and 500 tails. So it is with the techniques and methods discussed in this book, which stand the test of time. We do not claim that the methods are foolproof and consistently predict the turning points in share price trends. We have constantly pointed out that the random content of share price movement is totally unpredictable, but taken over a reasonable number of transactions, these techniques move the balance of probabilities substantially in favour of the investor. Taken over just one or two transactions, the results may not go the way that the investor would like. The way in which investors lose money is to fail to admit that they have made a mistake, and thereby fail to cut short a losing position early on before substantial losses have accumulated. If investors can overcome this psychological problem, they shift the balance of probabilities even more in their favour, because they will allow their profits to run while minimising their losses. Failure to maintain discipline at all times will totally negate the powerful techniques which have been presented in this book. Some guideline rules which should help the investor to maintain this discipline are presented in the following pages. Most of these rules are a natural consequence of paying attention to the laws of probability.

CAPITAL MUST BE PRESERVED AT ALL COSTS

This is the first and overriding rule of stock market investment, and the remaining rules and comments are designed so that this first rule can be followed consistently. The natural consequence of this rule is that when a position has been taken in a share, the investor must get out as soon as it is obvious that the share price is misbehaving. There will always be another opportunity for making profit. The prevention of loss is as important as the achievement of profit. Remember, there is no such thing as a paper loss. All losses are real.

NEVER ACT SOLELY ON ADVICE

Besides the internal pressure to stray from this disciplined path caused by investor psychology, the external pressures from the investment industry are immense. The investor is constantly bombarded with advice from stockbrokers, junk mail and the media.

Some of the most successful investors read nothing but the share prices page in their newspaper and do not even glance at the rest of the business section. I would not go quite as far as this, since a feel for the general investment climate which can be gained from these pages can be extremely valuable. By all means listen to advice from whatever source, but never, never act on it without analysing the data by the methods discussed in this book and then act only if the analysis is favourable.

NEVER PUT MORE THAN ONE-EIGHTH OF YOUR CAPITAL IN ONE SHARE

However positively the investor feels about the potential for a particular share, this positive feeling must be tempered by knowledge of the existence of random movement. Because of this, the investor should not, and must not, have 100% confidence in any one given situation. The temptation to go for broke and put everything into one magic share is always at the back of the investor's mind, and that is where it should stay. Never, never commit more than one-eighth of the investment capital to one share. This will keep the risk as low as possible while maintaining the potential for profit. From time to time there will be occasions when it is not possible to find eight shares in which to invest. In such cases put the money into short-term interest-bearing accounts where it can be got at instantly when the need arises.

DO NOT PREDICT TOO FAR AHEAD

We have pointed out that the uncertainty of prediction increases rapidly as we move further and further into the future. It is not necessary to look further ahead than about three to six months. In Chapter 1 we showed that substantial profits could be made in trends of about three months' duration. When we are rapidly approaching a buying point, a three- to six-month horizon is more than adequate.

DO NOT ANTICIPATE SHARE PRICE TURNING POINTS

A close attention to Chapter 9 and the discussion of market turning points will show that we should never anticipate a turning point. We should never make an investment until after the change in direction of the trend has been confirmed, and we should never disinvest until the change in direction has been confirmed. Channel analysis will tell us the approximate time and approximate price level of approaching turning points. This enables us to focus closely on what is happening, constantly updating and fine tuning the channels as mini-troughs and peaks are formed. As each trough and peak confirms our prediction of the direction of the channels, we gain in confidence that we will recognise the change in direction a very short time after it occurs. The profit available in upward trends which we buy into shortly after the start of these new trends is such that we do not need to worry about squeezing an extra one or two percentage points out by trying to anticipate them.

PROTECT PROFITS BY STOP LOSSES

Just as it is not necessary to try to squeeze extra gain out of a trend by jumping the gun, so it is not necessary to try to squeeze extra gain by continuing to run after the finishing tape has been passed. In the majority of cases, the termination of an upward trend results in a sudden sharp reversal of price over the course of one or two days. The risk increases dramatically as the inner channel increases in upward slope. Although we have shown by channel analysis that we can determine the selling point closely in time, it is essential that we protect ourselves against the conjunction of an adverse random movement and a change in direction of short-term cycles.

The most common stop loss method is based on percentages. This will generate a selling signal that is a consistent percentage down from the peak price. The method is a rigid one, with no room for subjective interpretation, and therefore will have its failures in the sense of premature

selling. Its advantage is that it is extremely simple to use, so that no interpretive effort has to be expended once a buying decision has been taken. On the other hand, investors using it will never have the expensive failure of seeing the price fall dramatically before action is taken.

The stop loss method is based on having a “floor price”, with a fall of the share price below this floor being the signal to sell. As the share price rises, the floor price is raised to keep a constant distance below it. The floor is not moved when the price falls, otherwise of course the price would never fall below it. There are two main variations on the method. In the first, the floor is kept a fixed percentage below the rising price and raised with every upward share price movement. In the second, the floor is kept a fixed number of pence below the rising price and again raised with every upward share price movement.

Any stop loss system has two diametrically opposed requirements, which are to protect the investor against a fall in price, but not to cause the investor to sell too soon, since share prices obviously fluctuate up and down as the underlying trend is rising. A stop loss which is only a small price differential below the rising share price will cause the investor to be “stopped out”, i.e. to sell his shares much too frequently, thus consistently losing the profit from the share price which continues to rise after a minor hiccup. Such a stop loss protects the investor against even small falls, but at the expense of profit. On the other hand, a stop loss which is a long way below the share price will allow profitable situations to run, but will also allow large falls to develop before being triggered. Conservative investors should use a small differential while more aggressive ones can use a wider differential.

Percentage Stop Losses

The best position for a percentage stop loss can only be determined by trial and error on a number of share prices, until a value is obtained that keeps the investor in for the majority of good rises and still allows him to make an acceptable profit. A value around 3% or 4% will be found to be useful for the majority of shares. Thus, on balance, the investors who take the trouble to analyse channel movement carefully during large price rises will do better than those who use a stop loss, but the users of the latter will have a simple method which requires very little effort.

Fixed Amount Stop Losses

The method of using a constant price in pence below the rising price is more in tune with channel analysis, because channel analysis is concerned not with percentage movement but with absolute movement. This is why all channels must have a constant depth. With a percentage-based method, the channel depth would get larger the higher the price rises, and narrower as it falls. Besides being almost impossible to draw such channels by a freehand method, the fact is that such a method does not work for channels. Since the main idea of the analysis is to avoid selling on a price fall which is only due to random movement, but sell when the underlying cycles start to move adversely, then the level at which we pitch the constant floor below the rising price should bear a relationship to the depth of the innermost channel that can be drawn, i.e. the channel that contains these random fluctuations. It is suggested that a value of half of the depth of the channel be used. Since at areas near to the peak tops the inner channel will be rising at a sharp angle, half of the channel depth represents a considerable fall back from the upper boundary.

The method of placing a floor half of a channel depth below the price can be seen to give similar results to those obtained by a careful analysis of the price movement where the price falling below the lower boundary of the inner channel is the signal to sell. Again, the point can be made that using the floor is very much easier than a detailed channel analysis, but

cannot approach the good results obtained by looking for a bounce back from the channel upper boundary.

PROTECT AGAINST LOSSES BY STOP LOSSES

This would appear to mean the same as the previous heading, but here we mean the stop loss to apply not to the profitable position above, but to the case where an incorrect buying decision has been made and the share starts to fall in price instead of rising. In this case the position never was in profit. Even so, the rule about protection of capital is paramount. The temptation is to think that we were slightly premature in recognising the start of the upward trend, and that in a few more days or weeks the expected trend will materialise. This attitude is a major cause of stock market losses, and must never be adopted. Use the same stop loss procedures as we discussed for profitable situations in Chapter 9. Never forget that if we can reduce our losses to say 4% or 5%, including dealing costs, when we make a bad decision, then this is only 4% or 5% of one-eighth of our total capital. We can afford to experience theoretically 20 to 25 such losses before one-eighth of our capital is wiped out, and 160 to 200 such losses before we are totally wiped out. The chances of this happening are at vanishing point for the conservative investment philosophy policy we are advocating in this book.

STAY WITH TOP SHARES

In Chapter 1 we showed the crucial influence of dealing costs on profit. The spread of prices, i.e. the difference between buying and selling prices for a share, is part of this equation. The spread is at a minimum for a share which is a constituent of the FTSE100 Index, and slightly more for constituents of the mid-250 Index. This gives 350 shares in all, and there is usually plenty of opportunity for finding a share amongst these which is approaching an upward trend.

IGNORE DIVIDENDS

Dividends are nice to receive, and if the investor is fully invested in eight different shares for most of the year, he can expect to receive many dividends which will add to his profit. That is all that can be said about them, for the investor should never let an impending dividend affect his buying or selling operation. In other words, if the signal comes to sell, do not think of hanging on for a little longer because the dividend will be announced the following week. If a buying point is approaching, do not buy in before the change in direction is confirmed simply because a dividend will be captured.

KEEP TRACK OF THE MARKET

It is always essential that the general investment climate is tracked by means of a market indicator such as the FT30 Index, the FT All Share Index or the FTSE100 Index. Weekly values are sufficient to do this, and channels can be drawn on the charts just as in the case of shares in order to get a feel for the direction of the market. In view of the increasing tendency of London to follow slavishly the gyrations of Wall Street, it is also a good idea to keep track of the Dow Jones Index on a weekly basis. Short-term dramatic movements in the US market almost always cause an effect in the London market.

If the market is falling, adopt a more cautious stance towards your existing holdings and new purchases, and watch your stop losses very carefully.

The investor may well find that in the initial stages it is very difficult to stick to this investment philosophy. He may find that straying off this narrow path brings him an instant reward that he would otherwise have missed. This is just the quixotic nature of the world of probability. Over a number of years the investor following these guidelines will see his capital gaining steadily in value, while the investor who allows himself to be diverted from time to time will be subjecting himself to increasing risk that will inevitably take its toll.

Finally, the investor who has successfully followed these techniques for perhaps a year or so will begin to look for greater gains than those which can be made out of investment in shares. Then, and not before, is the time to turn to the magnifying effect of dealing in traded options. In inexperienced hands traded options can be unacceptably risky, but they can be extremely rewarding when they are thoroughly understood and when the investor is correct about the movement of the underlying security. The author's previous book *Traded Options Simplified* will take the beginner from the basics through to simple strategies and then on to advanced strategies, as well as discussing some powerful new techniques for investors familiar with the field.

Appendix

Addresses

For lists of brokers: The Secretary, The International Stock Exchange of the United Kingdom and the Republic of Ireland Ltd, The Stock Exchange, London EC2N 1HP

Other Editions by the Author

Stocks and Shares Simplified (3rd edn), ISBN 0-471-92131-9, published by John Wiley & Sons Ltd, Chichester.

Traded Options Simplified (1st edn), ISBN 1-871857-00-7, published by Qudos Publications, distributed by John Wiley & Sons Ltd, Chichester.

Channel Analysis (1st edn), ISBN 1-871857-02-3, published by Qudos Publications, distributed by John Wiley & Sons Ltd, Chichester.

Winning on the Stock Market (1st edn), ISBN 0-471-93881-5, published by John Wiley & Sons Ltd, Chichester.

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