The First Step Guide to

Technical Analysis

NTAA®
The Nippon Technical Analysts Association

Preface

This booklet introduces the core of “Technical Analysis”.
Among the various methods of technical analyses, we will show you in this booklet the following three methods, i.e., Candlestick Charts, Trendlines, and Moving Averages.

Candlestick charts are one of the price recording methods developed in Japan but widely used globally, which indicate the current market situation at all times, though the charts pick up only the figures of the open, the close, the high, and the low.

Trendlines and Moving Averages are the methods used to understand the major tendency of price change, namely, the trend. These methods of analysis are widely known as Trend Analysis. Trend analysis has been used from older times but has become very popular only in the last half a century.

We sincerely hope that, when you read this book, you will have an interest in technical analysis and what has made investors develop such an analysis method. We are quite confident that technical analysis will be one of the useful methods for you to improve your investment activity.

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A
Fundamental analysis

Fundamental analysis focuses on the intrinsic value of the market. If market price is below the intrinsic value, then the market is undervalued and should be bought or vice versa.

If you compare the business results with the stock prices in such a long period as several decades, you will find the resemblance of the both figures, i.e., when the businesses are increasing, the stock prices are rising and when the businesses are decreasing, the stock prices are falling.

The intrinsic value of the business enterprises is estimated as the present value of the assets of these enterprises and the flow of future dividends to be paid by these enterprises to shareholders. But, the question is how accurate people can forecast the flow of future dividends or the interest rate used for the calculation of the present value.

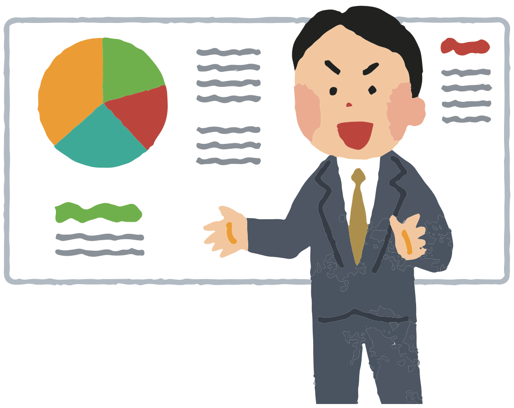
The value of the business enterprises are changing slowly in several months or even several years. The stock prices tend to move in advance before the change of the value of the business enterprises.

Furthermore, the stock prices are moving up rather slowly, but moving down rapidly several times faster than rising up. When you buy, you can depend and rely on the fundamental analysis, but when you sell, it sometimes too late if you try to confirm the downturn of the businesses.

Some people say that the fundamental analysis is good for selection of securities to be invested and not good for catching the timing of buying and selling

B
Technical analysis

Technical analysis concentrates on the study of market supply and demand.
Prices are rising if the investors think that the market is undervalued and then they buy. Price are falling if the investors think that the market is overvalued and then they sell. Because some part of the prices are based on the investor's expectation or overreaction, the prices do not always properly reflect the intrinsic value.
People who are inside the business field usually know about their business better than people on the outside.
The judgement of people inside must be quicker and more accurate than the outsider. And the investment activities of such people inside have been recorded as the movement of the prices and the trade volume.
So, if you analyze details of such movement and volume, you might find the movement of the antecessors.
The fact that the big change of the prices influence strongly to the investors applies to the people participating market at any time and at any situation. The history repeats itself.
Technical analysis focuses on the movement of the prices and the trade volume and tries to forecast the future movement of the prices.
Technical analysis concentrates on the change of the prices, and therefore you would know the timing of buying and selling, but not on the intrinsic value, and therefore you would not know whether you were properly investing.
We have found that both fundamental analysis and technical analysis have strong points and weak points, and therefore if we use the strong points of both analysis, we might be able to become the ever winning investors.



C
Candlestick Charts

When we look into price movements of a certain stock and other financial assets, we usually use the so-called candlestick charts.

The name of candlestick was taken from the shape of chart which is in Japanese called “Ashi “. If you translate this Japanese “Ashi” literally to English, it shall be candle-foot stamp(s). This “Ashi” has two meanings in Japanese.

One is the time range of recording the movement of the prices like a day, a week, a month and even a minute or five minutes are possible.

Another is the drawing style. Nowadays, the style to show the stock price chart is the only “candlestick” , but in Meiji Era in Japan (more than 150years ago) , there were the various style for showing the stock price chart like “bo-ashi” or stick-foot stamp and “kagi-ashi” or hooked-foot stamp and the others. This foot stamp is sometimes called “Ashi-gata” or foot stamp shape and “Sen” or line.

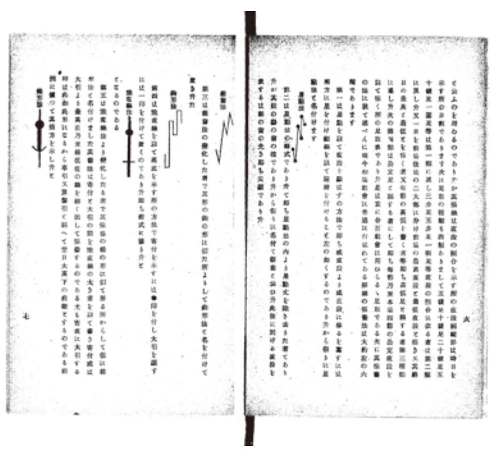
1. The history

Some people say that the founder of candlestick charts was Sokyu Honma, a Japanese merchant in Edo period who was very famous as a speculator.

But, according to the book written about the market charts in 1904, Sokyu Honma used the “black and white (or sun and shadow) switching over chart” which is very unique and different from the chart generally used. This should be the one of the “hooked chart (kagi-ashi)”.

The origin of “candlestick chart” is said to be “candlestick drawing (rosoku-biki)” which was introduced by Kokichi Inoue, a Japanese market player. And Kokichi Inoue defined in his book that “candlestick drawing” was the kind of stick chart (bo-ashi) which showed the prices of the open and the close in a rectangle shape.

And then this “stick chart (bo-ashi)” was introduced as one of the commonly used method called “anchor-shape method (ikarigata-ho)” . This means that Sokyu Honma might have nothing to do with “candlestick drawing”.



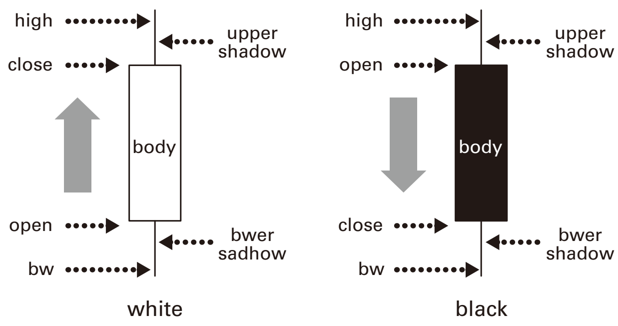
Showing “anchor-shape method (ikarigata-ho)”

2. How to draw

First, draw the vertical line from the highest price to the lowest during a day.
Then, draw the rectangle shape from the open price to the close price over the above vertical line. And if the close price is higher than the open price, this rectangle shape is shown in white and if the open is higher, it is shown in black.
This white line is called “the sunny line” and black line “the shadow line”.
And this rectangle shape is called the” real body” . The line between the top of the real body and the highest price on that day is called upper shadow and the line between bottom of the real body and the lowest price is called lower shadow. This shadow is sometimes called “beard” . Because the principal movement is the movement between the open and the close, this movement is drawn boldly as the real body and because the shadow is the rather extra movement to reflect the adjustments of the overshooting, it is drawn as one line.

3. How to use

A candlestick tells us various things. For example, the length of the real body tells us the strength of the momentum of both seller and buyer. When the buyers are stronger, they keep buying and the white real body becomes longer, and when the sellers are stronger, they keep selling and the black becomes longer.
The unusual long big real body is appearing occasionally once a month or two months, when the movement becomes 2 to 3% of the price (the usual average movement is around 1%.).
The long real body and the short shadow simply tell us that the majority of the investors have followed the strong movement of the price and show their momentum. But sometimes it is possible that they have been ended up with overshooting the market.
When both the real body and the shadow are short, it tells us that the momentum of selling and buying is almost equal or investors see the market on the sidelines with no clear direction, or nobody is interested in the current market and leave it as it is. The unusual short small real body is appearing, when the price movement is contained in the range of 0.5% or under of the price and this also appears once a month or two months.



Candlestick shows price movement of a day

4. Long shadow

The long shadow should also be paid attention to. The average length from the highest to the lowest is 2~3% of the price. So, if the length of the upper or lower shadow is more than this level and the length of one shadow is more than a half of the total length, it must be quite seldom and should be paid attention to.

It is said that the long shadow generally tends to move against the shadow.

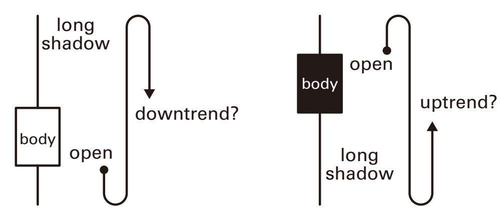
For example, the long lower shadow means that the price being sold heavily eventually returned to the level of the open, and at the end the power of the buyer became stronger than the seller. Accordingly the buying power might be kept strong on the next day. On the contrary, the long upper shadow means that the price being bought finally pushed to the open level, and the power of the seller was stronger than the buyer, then the market would be kept low on the next day.

Although you find that this explanation is rather reasonable, there can be a pitfall. How do we explain the situation that, first, the long shadow comes, then the short shadow appears? It closed facing toward the long shadow, then, contrary to the above, it looks that the price tends to move toward the long shadow. But no one can tell which shadow is made first.

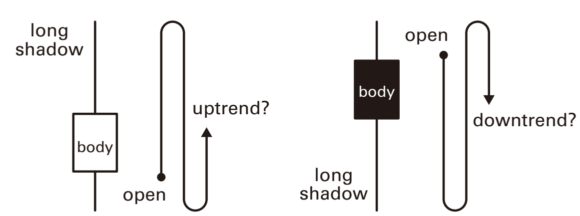
What is the truth? According to the statistics, the upper shadow often appears in price upward phase and the under shadow often appears in price downward phase.

In reality, the price is likely to move toward the long shadow. We might wrap up as follows: In upward phase, top runner of the buyer invaded the enemy territory but was pushed back. In downward phase, the top runner of the seller invaded the enemy territory but was pushed back. Of course, this explanation is not always true, so you must be careful.

Thus, even only one candlestick chart tells us so many things as above, if you combine 2 or 3 candlestick charts, there are much more things to find. Many investors have been studying this from the older times, but combining the charts is too complicated to understand and some combination might not be correct from the statistics view point. If you like to investigate, please do.



Generally tends to move against long shadow



D
Trendlines

The word “Trend” means the direction of the price movement when you use this word as technical term for the market. In upward phase it is called “uptrend” . The continuous change to a certain direction is called “long-term trend”. The rapid and big change is called “strong trend”.

1. The history

When the strong uptrend reaches a certain extreme level, the market turns to downtrend and when the strong downtrend reaches a certain extreme level, the market turns back to uptrend. This repeating of the uptrend and downtrend one after another continues forever although the periods or timings are always different. The concept of this market trend was written in the book around more than 250 years ago, the word “trend” was not used at that time, though.
What makes the trend? The answer is thought to be nowadays as follows.
In upward phase, some investors in the know notice favorable materials to some stocks and begin to buy them, then the market rises a little bit. These materials are then transmitted to the market and the buyers are increasing as days go by, and the market rises further more. After that the rise is noticed by the rest of investors, the market begins to rise in a full scale. This story sounds very likely.
But in 1950’ s, many economists, especially Americans, have successively published their research papers that stock prices do not change in a regular pattern but only in a random pattern. These research results were echoed in both academic and business world, they were scrutinized by many economists and investors and had gradually accepted as the fact in twenty years. That the change of the stock prices occurs in a random manner means that the trend has nothing to do with investor’ s psychology or fighting on demand and supply. But, this does not mean that the trend does not exist.

2. The finders

If you catch the trend, it is easy to earn the profit from the investment. You buy in uptrend and sell in downtrend. Actually however, as markets do not generally move straight but move randomly depending on the daily news and demand and supply. Market moves are characterized by a series of zigzags. These zigzags resemble a series of successive waves with fairly obvious peaks and troughs.

You have to find out a broader perspective on a direction of the trend by having got rid of the trifle and unnecessary movements. One method to gain such a perspective is to draw a straight line which could suggest a certain trend and thus is called ”Trendline”.
The oldest description about trendline was found in Japan in the book about the stock trade (“Kabushiki Baibai Youketsu” or “Essence of Stock Trade”) written by Kokichi Inoue in 1912. He pointed out that you may draw a straight line by connecting either troughs or peaks and expand it to merge with another extended line of then current price. This is apparently drawing of trend line itself, but to our regret Inoue did not give any name to this drawing method and its usage.
The name “Trendline” appeared in the book “Technical Analysis of Stock Trends” written by Robert Edwards and John McGee in 1948. This book is called the Bible of Technical Analysis and revised many times with the new knowledges.

3. Uptrend line and Downtrend line

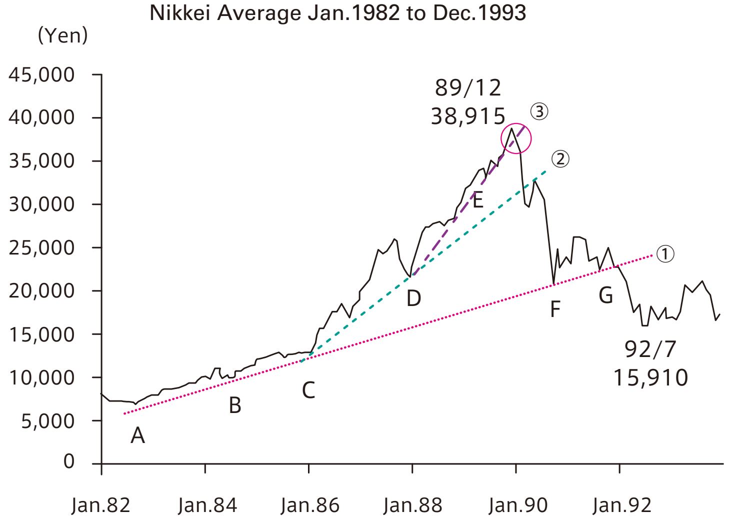
There are two trend lines. One is the uptrend line analyzing the uptrend and another is the downtrend line analyzing the downtrend. The uptrend line is sometimes called support line and the downtrend line is called resistance line.
The uptrend line is the extended line drawn from low milestone price to then the next low milestone price when the market is considered in the uptrend. The downtrend line is the extended line drawn from high milestone price to the next high milestone price when the market is considered in the downtrend.
And when the actual stock price crosses under the uptrend line or crosses over the downtrend line, either case is considered the signal of the reversal point of the trend price.

4. How to use Uptrend line

Below is the monthly chart of Nikkei Average from 1982 to 1993. This shows the turning point on which the historical high price of Yen38,915 started to move downwards in 1989 in the so-called bubble market.
Line 1 drawn from A to B and extended
Line 2 drawn from C to D and extended
Line 3 drawn from D to E and extended

All lines are upward line. You can see the change of the pitch from Line 2 to Line 3 getting faster. The point where the actual stock price crossed under Line 3 was the turning point of the reversal of uptrend which clearly shows that the 8 -year long rising market came to an end.

Example of uptrendline
Nikkei Average Jan.1982 to Dec.1993



5. How to use Downtrend line

Below is the monthly chart of the Dow Jones Industrial Average 30 from 2000 to 2012 which shows the downtrend example. This Average recorded the highest of US$13,930 on October, 2007 and then came the 2008 financial crisis triggered by the bankruptcy of Lehman Brothers, and fell down to US$7,062 on February, 2009.

Line 1 drawn from A to B and extended

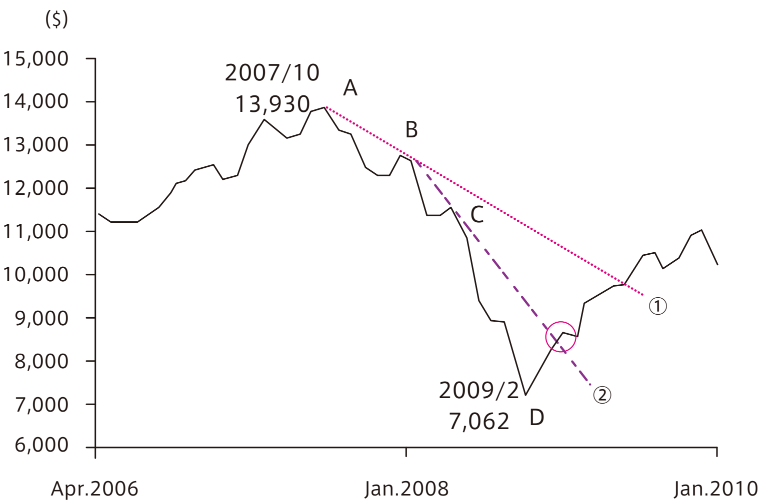
Line 2 drawn from B to C and extended was added because the pitch of falling became much faster.

The turning point of the stock price was the price just over the Line 2 and after that the price was rising up tremendously. Especially, the time when the price crossed over Line 1, the market became more confident on the uptrend.

There are several methods of trend line analysis like level line analysis, channel line analysis focusing on the detailed movement, fan line analysis focusing on the long-term wave of movement and levelling-off trend analysis.

Example of downtrendline

Dow Jones Industrial Average 30 Apr.2006 to Jan.2010

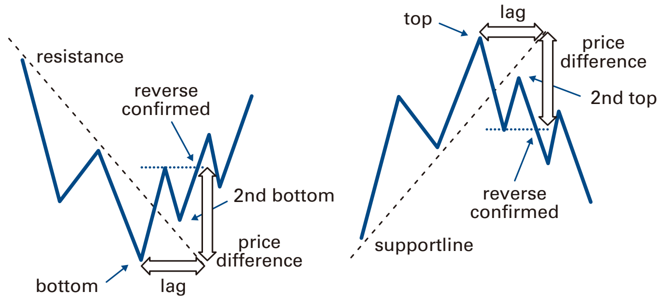


6. Trend Continuity

The continuing uptrend means that the low price of turning point becomes higher than the low price of the previous turning point and simultaneously, the high price of turning point becomes higher than the high price of the previous turning point. This means that the both the low price and the high price of each turning point are rising.
On the contrary, the continuing downtrend means the high price of turning point becomes lower than the high price of the previous turning point and simultaneously, the low price of turning point becomes lower than the low price of the previous turning point. This means that the both the low price and the high price of each turning point are falling.
Even if the market seems to be rising, either the low price or the high price of the turning point does not surpass the previous turning point and/or if the market seems to be falling, either the low price or the high price of the turning point does not underpass the previous turning point, you must be careful it might be the beginning of the reversal of the trend.

7. Throw Head and Tail

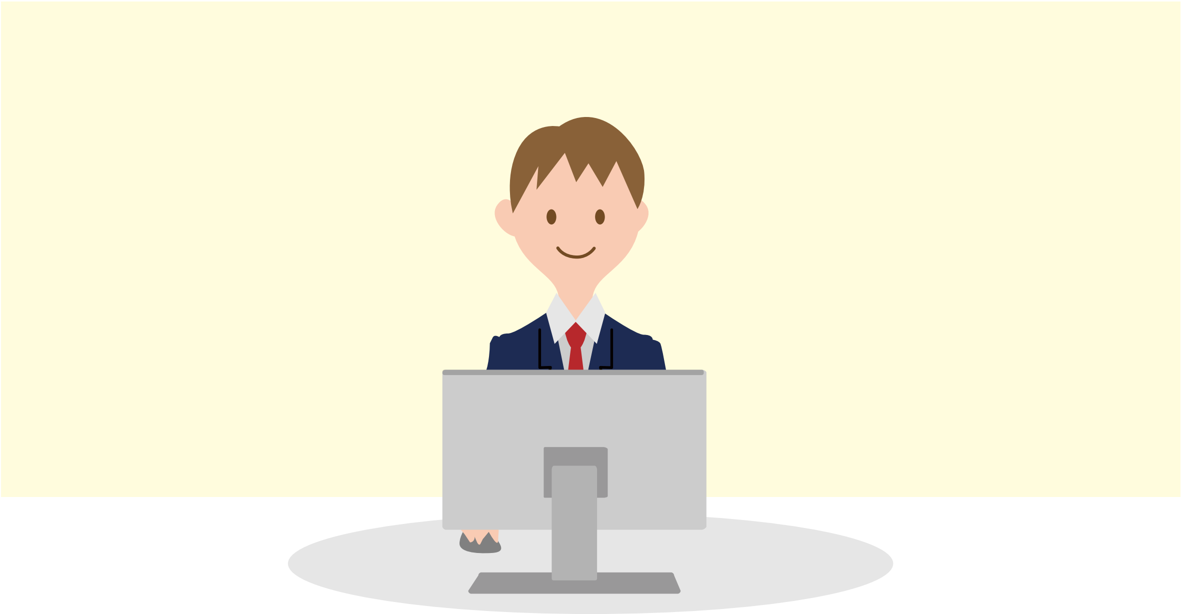
What situation shall be called the turning point of the trend? Typical example is that after hitting a bottom, the change starts when the second bottom price surpass the level of the high price of turning point without hitting the major bottom or resistance line (See chart below left).
On the contrary, after hitting a top, the change starts when the recovery high price underpass the level of low price of turning point without hitting the top or support line (See chart below right).
The judgement of the change of the trend is usually lagged long after the timing of the bottom price or the top price, so you might feel that people might suffer loss in between. You should not be afraid of this. They say that Trends exist until definitive signals prove that they have ended. In other words, as a famous proverb cited often in investment that goes "throw the head and tail", you had better move after confirming firmly the change of the trend.



There are always lags

8. Straight line effect

Trendline is the straight line drawn from one turning point to another in the past and then extended to the future. This might make you feel that the trend line is old and inflexible one. But, because this line is the straight line which is not influenced by the price changes afterwards, trendline has its own merit. If the price is hovering at the current level, only the straight line is able to make it possible for you to guess the timing of the price crossing over the trendline and the price level at that timing.
It is always difficult to judge whether you keep the position with patience or close the position immediately. The trendline might suggest that when the price crosses over some level, there might be less merit for keeping the position. In other words, the trendline tells you “when to give up” and this means that the trendline is the tool of warning.
Because the trendline is drawn by hand, some says that you can draw it arbitrarily. Especially, when you draw the line of the past market, it is quite likely so because you know already the result of the market.
If you establish a certain standard to extract the high and low prices of the turning point and make a clear definition of that standard, you can leave everything to the computer and draw the trendline automatically.
The trendline is never the legacy in the past and is one of the most useful technical analysis methods for everybody’s use.



E

Moving averages

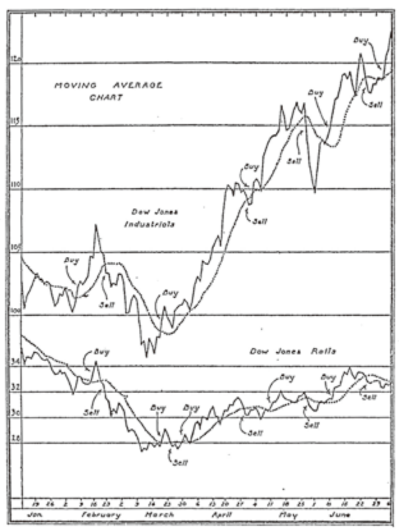
One of the methods to extract a trend after eliminating the trifle and meaningless change of the market is called “smoothing out the unevenness of prices. You can eliminate such small changes by calculating an average of a certain period of the price data. The term moving is used because only the latest prices of specified time span are used in the calculation. This means that the period of price data to be averaged moves forward with each new trading day. And when you draw a line by connecting these averages, this line is, thus, called “Moving Average” . This “Moving Average” is sometimes abbreviated to MA.

While the trendline is basically drawn outside the change of the prices, the moving average is drawn over the change of the prices. The moving average is automatically drawn from the change of price and reflect automatically and successively the movement of the change of the prices without being influenced by drawer’s consideration. The moving average shows the trend of the change of the prices and is regarded as one of the trendlines in a broad sense.

1. The history

Moving averages are one of the oldest and most popular technical analysis tools. In Japan, around 100 years ago, the concept appeared in several books. In United States, around 80 years ago, the moving average of Dow Jones 30-stock Industrial Average was first introduced in the investment magazine called “Stock Market Technique” at September-October issue in 1935 published by Richard Wyckoff.

But it became popular only after the publication of “Granville’s New Strategy of Daily Stock Market Timing for Maximum Profit” written by Joseph Granville in 1960 and in Japan the publication of the translation of this book in 1962.



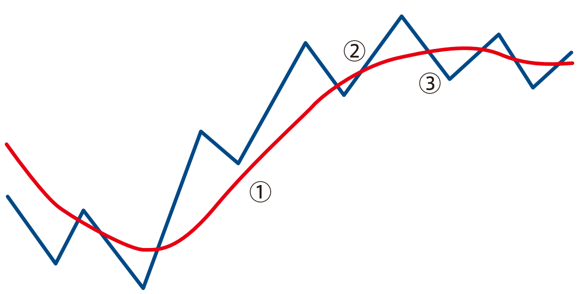
「Stock Market Technique」(1935)

2. How to calculate a moving average

Most simple method of a moving average is called a “Simple Moving Average”.
A "simple" moving average is calculated by adding the security's prices for the most recent "n" time periods and then dividing by "n." For example, adding the daily closing prices of a security for most recent 5 or 25 days and then dividing by 5 or 25. The result is the security's average price over the last 5 or 25 days. 5 days are coming from one week and 25 days are one month. The average evens the up and down of the prices during the calculating period, and at the same time, may work on eliminating the periodical change of the prices.
In weekly chart, 13 weeks, 26 weeks, and 52 weeks are often used. This eliminates the seasonal change of a quarter, a half and one year. In monthly chart, 12 months, 24 months and 60 months are often used. In case of 60 months, the influence from so-called “kitchin Cycle” representing a short-term economic cycle is eliminated.
The moving average is usually shown by adding to the price chart like candlestick chart or others.

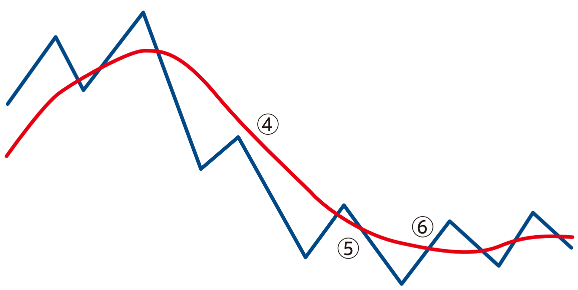
3. How to use

See below chart no.1; if the moving average line is rising from bottom left to top right, it means the upward trend. See no.2; if the price crosses up through the rising moving average line, this means the acceleration of paces of rising. See no.3; if the price crosses down through the moving average line, this means the slowing down of paces of rising. After that, if the moving average line turns to downward-sloping, this means entering the downward trend.



Uptrend

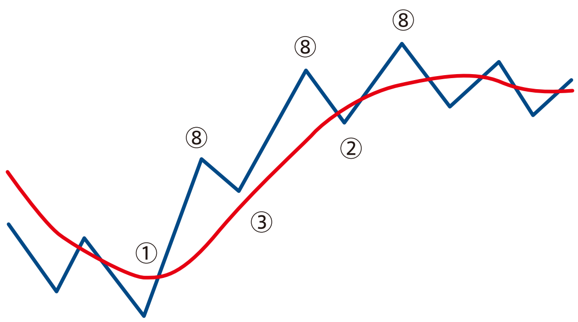
Vice versa, see no.4; if the moving average is falling from top left to bottom right, it means the downward trend. See no.5; if the price crosses down through the falling moving average, this means the acceleration of paces of falling. See no.6; if the price crosses up through the moving average line, this means the slowing down of paces of falling. After that, if the moving average line turns to upward-sloping, this means entering the upward trend.
Above is the basic analysis of price chart and moving average. Movement of the prices is repeating this change.



Downtrend

4. Granville's Rule (buying)

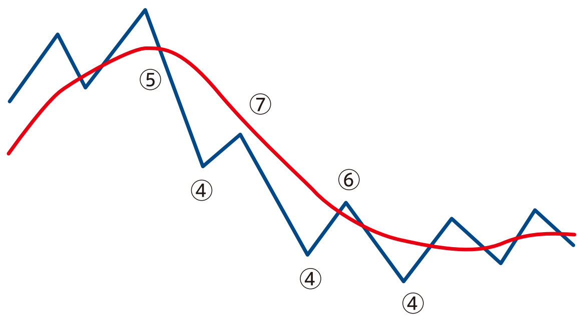
Granville invented 8 investment's rules from the positional relation between the price and a 200-day moving average.
4 signals for buying are as follows:
① At the time the moving average goes sideways or upward after falling down, and then the stock price goes higher than the moving average,
② The stock price goes lower than the uptrend moving average,
③ The stock price being over the uptrend moving average falls toward the moving average and then again begins to rise without recording the figures below the moving average,
④ The stock price becomes far below the downtrend moving average.



Uptrend: Buy① ② ③、Sell⑧

5. Granville' s Rule (selling)

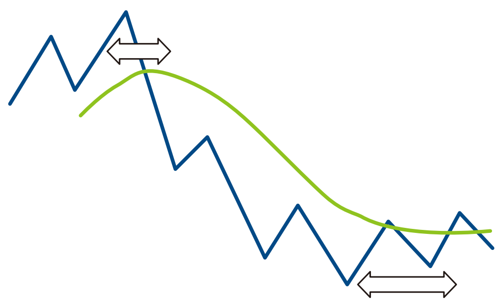
4 signals for selling are as follows:
⑤ At the time the moving average goes sideways or downward after rising up, and then the stock price goes lower than the moving average,
⑥ The stock price goes higher than the uptrend moving average,
⑦ The stock price being under the downtrend moving average line rises toward the moving average and then again begins to fall without recording the figures over the moving average,
⑧ The stock price becomes far over the uptrend moving average.
There are so many examples of the above 8 signals. But you must be careful about the "wrong signals" when you solely depend upon these signals. The "wrong signals" mean the signals of buying and selling with no actual returns.



Downtrend: Sell⑤ ⑥ ⑦、Buy④

6. Weak point

The simple moving average has the intrinsic nature to lag a half period of the calculating period. In case of short-term line, there should not be any problem, but in case of long-term line, this nature should not be neglected.
For example, the turning point of 200-day moving average used by Granville is lagging about 100 days. In other words, the trend shown by the present 200-day moving average is the trend of 100 days ago. It is very difficult for investors to judge the market according to information of 100 days ago. If investors want to know the right timing of investment, the calculating period must be shorter, but the shorter the period becomes, the more meaningless movements increase. The increase of this movements makes difficult for investors to catch the trend. There are both advantages and disadvantages.

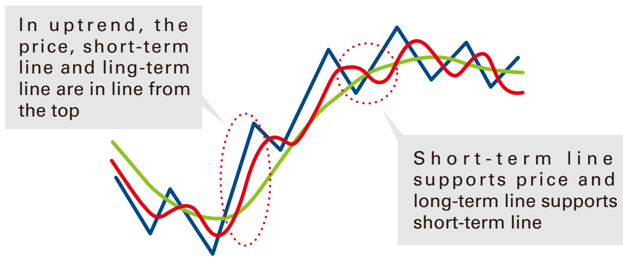


Change of moving average lags behind change of the price

7. Two moving averages of different terms

The price movements sometimes include irregular changes. The price crossing over the moving average does not always mean the change of the trend. It is usually more advantageous to employ two moving averages.
This technique is called the double crossover method. The longer calculating period is called the long-term moving average (long-term line) and the shorter called the short-term moving average (short-term line). Sometimes, the middle-term moving average is used (middle-term line).
In uptrend, the price, short-term line, and long-term line appear in this order from the top. Even if the prices fall in uptrend, short-term line and long-term lines usually become downward support line. This means that fall of the price stops at that level and then goes up, or even if the short-term line falls, long-term line stays at the support line and fall of the price stops at that level. In

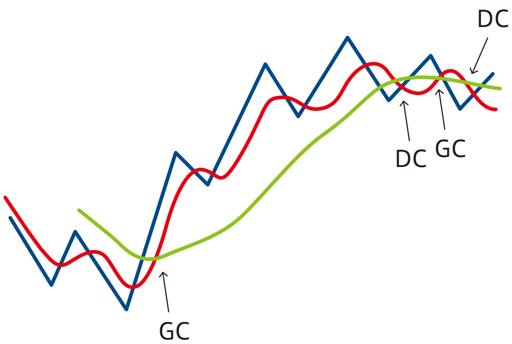
downtrend, the price, short-term line, long-term line appear in this order from the bottom. If the price rises, short-term line and long-term line usually become resistance line. This means that rise of the price stops at that level and then goes down, or even if the short-term line rises, long-term line becomes resistance line and rise of the price stops at that level.



Moving average on uptrend

8. Golden Cross and Death Cross

When the downtrend changes to the uptrend, firstly, the price crosses over the short-term, and secondly, the short-term crosses over the long-term. This is called “Golden Cross”. Lastly, long-term line turns to uptrend and the change of the direction to the uptrend accomplishes.
When the uptrend changes to the downtrend, firstly, the price crosses under the short-term, and secondly, the short-term crosses under the long-term. This is called “Death Cross”. Lastly, long-term line turns to downtrend and the change of the direction to the downtrend accomplishes.



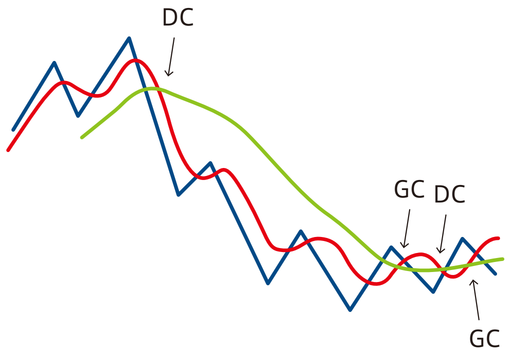
Buy at GC and Sell at DC makes profit in a big trend

9. Summary

The golden cross always appears when the price turns to uptrend and the death cross always appears when the price turns to downtrend. So the operation tactics can be “buy at golden cross” and “sell at death cross”.

By using these tactics, investors might earn some profit from the long-term trend market, but from the short-term trend market, might not earn any profit. Because the moving average is lagging behind the actual movement of the price, and the cross is also lagging.

The investment in accordance with the trend of the market is called market following strategy (follower) and this market following is the method to take and follow middle or long term trend. The investment strategy based on the middle and long term trend is orthodox strategy and rather easy to understand, even for the beginners, and also likely to match the fundamental analysis. So, let us master this market following strategy first.



Conclusion

This book is written for providing the opportunity to study technical analysis which is, we believe, very useful for an investment activity.
The key to successful investment is buying low and selling high, but it is quite difficult to judge which level is low or high. Especially, you have to change the investment strategy depending on the period you take, e.g., for one year, or 5years or longer term.
But, first, please be reminded that there are fundamental analysis and technical analysis.
It is a good idea to use the NISA (Nippon Individual Savings Account) to practice those analysis methods.
There is a lot of anomaly (the incidence when the actual result under a given set of assumptions is different from the expected result) in the world of market, but sometimes the past experiences might tell you something. There is no royal road to success, so it is recommended to make an advance step by step.
If you have any questions, please do not hesitate to contact us, the Nippon Technical Analyst Association.

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