Trend Scoring - Assigning an overall technical score to any instrument across multiple time frames.
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Abstract

One of the most common areas of confusion within teams of investment professionals and communication with clients arises from not being able to clearly define trend and time horizon. This paper sets out a technical analysis framework whereby multiple time frames can be taken into account for evaluating the overall strength of trend for any instrument. It also seeks to define mechanical entry and exit rules for positions based on the scoring mechanism outlined.

The purpose of this trading strategy is to reduce confusion and ambiguity around different time horizons and ensure all investment participants, and potentially their clients, are on the same page in understanding overall trend state of an instrument. The scoring is unambiguous.

The paper outlines traditional theory (Dow Theory) around multiple trends and understanding bullish, bearish and sideways trending markets. A clear framework is provided for defining long-term, medium-term and short-term trends and using this framework as a common language between people is strongly advocated.
A number of potential technical analysis techniques are proposed allowing the market professional to devise their own scoring mechanism. The methodology chosen here, as an example, utilizes Ichimoku cloud charts for their relative simplicity in defining bullish, bearish and sideways trend states.

The soring mechanism assigns more significance to the longer-term primary trend and decreasing importance to the medium-term and shorter-term trends, though changes in these trend states are instrumental in making decisions to enter and exit positions. The objective is to understand when all the trends are lining up ahead of major market participation and when they are beginning to come to an end.
The proposed overall trend scoring mechanism allows for large universes on instruments to be ranked allowing the market professional to home in outperformance quickly and easily. This same mechanism should ensure that a fund is holding the strongest trending instruments. This simple trend following strategy ensures 'the trend is your friend.'

Dow Theory – The founding rules of technical analysis

Over 100 years ago, Charles Dow, who founded the Wall Street Journal and devised the Dow Jones Index, identified that market price behavior followed trends. Six basic rules, which became known as Dow Theory, came out of his work. These rules still apply in today's markets and any serious technical analyst should be able to recount them from memory. The rules are as follows:

1. The market has three movements – a primary or major trend of about a year to several years, the medium swing or intermediate reaction of 10 days to 3 months and generally retracing 33% to 66% of the major trend and the short swing or minor movement which can last from hours to weeks. These movements can all be occurring simultaneously – trends, within trends, within trends.

2. The trends have three phases – an accumulation phase with shrewd investors 'in the know' acting contrary to popular opinion, a public participation phase where the market catches on and prices move more dramatically and a distribution phase where the astute investors begin to unwind their positions.

3. The stock market discounts all news – prices quickly absorb all new information as soon as it becomes available - what we now know as efficient market hypothesis. The chart represents everything that the market knows.

4. Stock market averages must confirm each other – Dow also devised the Transports Average, which like the better-known Dow Jones Industrials Average, survives to this day. Calculated using rail and industry stocks respectively, Dow argued that they need to confirm each other for any trend in prices to be believed. While this exact relationship is little used today, this idea now extends to market breadth analysis and probably sparked the concept of 'divergence' between price and other technical indicators.

5. Trends are confirmed by volume – Dow believed that price moves accompanied by high volume represented the 'true' market view and that price moves on low volume were to be taken less seriously. This is also in line with the later ideas of confirmation and divergence noted with many technical analysis tools.

6. Trends exist until definitive signals prove that they have ended otherwise – the primary trend should be given the benefit of the doubt during secondary reversals. Here is the foundation of what we now know as 'the trend is your friend' a phrase attributed to Martin Zweig in his book, Winning on Wall Street, 1986.

In understanding the concept of trends within trends, Dow used the analogy of the sea where the tides or major swell of the ocean, which always ebbed and flowed, could be considered the primary trend. Waves, occurring with or against the tide, would be the secondary trend and ripples or wavelets across the sea surface would represent the tertiary trend.

The ability to resolve the presence of multiple trends for an instrument is a skill that continues to allude many market participants. Prices may rise before they fall or fall before they rise. Timing the multiple trends in train can be the difference between success and failure. While the trend is your friend, all trends come to an end. There will be times where the short-term trend changes are indicating the potential for the longer-term trends to change as well and times where they are just a pullback in price. It is valuable to have a mechanism that can measure the totality of the multiple trends that are present.
Bullish and Bearish

The terms bullish and bearish were used extensively in Charles Dow's time. There are a few theories as to where the terms come from. It is thought that 'bull' and 'bear' derive from the way in which each animal attacks its opponents. The bull will thrust its horns up into the air, while a bear will swipe down. These actions may have been related metaphorically to the movement of a market. If the trend was up, it was considered a bull market. If the trend was down, it was a bear market.

The terms bullish and bearish have since become useful in technical analysis. A chart going up in price is not necessarily good news if you are a short seller. A rising commodity price, such as that of natural gas, might be great if you are a gas producer but bad news if you are a consumer, a company, or for inflation and the wider economy. The beauty of the terms bullish or bearish from a chart perspective is that they unambiguously imply the price will go higher or lower respectively.

Time Horizon

Defining whether a chart is bullish or bearish is not always that straight forward. Figure 1 shows a daily chart of American Express. Over the course of several months the price has been in an uptrend, but in the last two months the price has been trending lower. This highlights the fact that there are two trends in train here, a primary trend and a secondary counter trend. This emphasizes the importance of time horizon.

Figure 1 - Daily chart of American Express – Chart: Updata Analytics, Data: Bloomberg

One of the biggest advantages of technical analysis versus techniques such as fundamental analysis is the ability to change the chart time frame in order to change the time horizon of a view. A daily chart allows us to mentally extrapolate price action for the coming weeks. But this chart will not be very helpful for predicting what will happen in the next hour and it will probably be too detailed for making a prediction of where prices will be years out. Figure 2 shows how we can relate chart frame to time horizon.

	ULTRA SHORT	VERY SHORT	SHORT TERM	MEDIUM TERM	LONG TERM	VERY LONG	ULTRA LONG
Chart Interval*	Tick-1 min	5-10 mins	Hourly	Daily	Weekly	Monthly	Quarterly
Predict Forward	Minutes	Hours	Days	Weeks	Months	Years	Many Years
Lookback	Hours	Days	Weeks	Months	Years	Many Years	Decades

SHORT TERM TRADER	SHORT TERM	MEDIUM	LONG TERM	VERY LONG			
LONG TERM INVESTOR				SHORT TERM	MEDIUM	LONG TERM	VERY LONG

Figure 2 – Time Horizon Table – Source: Cloud Charts – Trading Success with the Ichimoku technique, 2010

The table sets out a framework whereby a common language is achieved between market professionals, trading and investment teams and their clients. A daily chart can be considered medium term with a time horizon of several weeks ahead. For this chart, it will normally be necessary to look back over several months, at least, in order to visualize where the prices are likely to be headed in the coming weeks. Thinking longer term, to make a judgement on where prices might be in the coming months, a weekly chart time frame will normally be better. In this case looking back at the chart data over a few years, at least, will be necessary. For predicting years ahead, a monthly chart is likely more suitable. Conversely, shorter term views require the analyst to look at intra-day chart intervals. A 60-minute chart time frame, short term, might contain just a few weeks of data and is more appropriate for predicting price movement more accurately for the coming days. A day trader, thinking hours ahead may use a 5-minute or 10-minute chart.

Different market participants will often have differing views of what short term and long term actually mean. For a long term buy and hold investor, short term may be a period of several weeks, while a short-term trader may consider a week to be long term. This highlights the pitfalls of using language such as long-term and short-term without defining the time horizon. Defining a view as 'The long-term weekly Chart, looking months ahead' provides clarity to anyone that a view is being communicated to. This also ensures that the right time frame chart is being analyzed for the desired time horizon. The easiest way to remember this is: minutes means hours, hours mean days, days means weeks, weeks means months and months means years. A quick recoil guide is shown in Figure 3.

VIEW	Minutes	Hours	Days	Weeks	Months	Years	Decades
means	⇧	⇧	⇧	⇧	⇧	⇧	⇧
CHART	Seconds	Minutes	Hours	Days	Weeks	Months	Years

Figure 3 – Chart Frame and Time Horizon – Quick Reference

Given the complexity of these multiple time frames, it is not normally accurate to simply say that an instrument is bullish or bearish. It will very often be the case that an instrument is bullish and bearish simultaneously on differing time frame charts. The only time that it can be said that an instrument is unequivocally bullish is if it is making an all-time high on all time frames. A historical low price point may be unanimously bearish. Just stating that an instrument is bullish or bearish without consideration of multiple trends risks being wrong on at least one time horizon and leaves room for misinterpretation.
Trend Identification

There are a number of technical analysis tools for defining the trend of a chart. Some are quite subjective, such as the process of drawing trend lines on a chart manually. Channels, such as least squared regression trends, require beginning and end points of the chart data to be chosen. Moving averages are one of the best-known tools, whereby prices above a moving average can be considered bullish and below the average is bearish. But there are two problems with moving averages for trend definition. The first is that a period needs to be chosen for the average. The 200-day, 90-day or 30-day are popular. These are often considered as long-term, medium-term and short-term averages respectively. As these numbers are variables this means any adjustment in the variable will potentially vary the result of whether prices are above or below the average. And these periods may make little sense on a weekly or an hourly chart. Two moving averages can be used for smoother, clearer signals of a change in trend but again periods for each average need to be chosen introducing a degree of variability in ascertaining the trend.

A Third Trend State

A second problem with moving averages for trend definition is the binary interpretation of a chart being bullish or bearish. Markets are not always trending up or down and it is often the case that prices become rangebound in a sideways direction. In this case prices will oscillate more rapidly above or below their moving average. This points to a sideways trend state between bullish and bearish. This phase may signal a change from bullish to bearish or vice versa or it may be a consolidation phase before the previous trend resumes. The shorter-term trend can provide clues as to which scenario is most likely, again highlighting the importance of having an overall understanding of the different time frame charts.

Bollinger Bands, devised by John Bollinger, are a more dynamic way of seeing uptrends, downtrends and sideways trends as shown in the medium-term daily chart of IBM in Figure 4. The bands are drawn two standard deviations of price movement either side of a simple moving average. This means 95% of price moves will be inside the bands. If prices are

between the average and the upper band, prices are trending up. Between the average and the lower band, signals a downtrend. When prices oscillate between the bands with the bands themselves running horizontal, this indicates a sideways market. Price rising or falling outside the bands indicates a dramatic increase in volatility. The bands coming together, what Bollinger calls 'the squeeze', normally occurs ahead of a volatility increase, and often heralds a price breakout or a change in trend. Figure 4, shows how the uptrends, downtrends and sideways trend typically last several weeks to a few months. Days means weeks.

Figure 4 – IBM Medium Term with Bollinger Bands – Chart: Updata Analytics, Data: LSEG

Bollinger recommends a 20-day moving average with the bands set at two standard deviations of prices over the rolling 20 days. This may be appropriate for the approximate number of trading days in a month but it still implies that if these variables are altered, the results will be different. Furthermore, 20-weeks may not be the right number to use on a weekly chart. Similarly, 20-hours might not be best setting on an hourly chart.

One technical analysis indicator, which seeks to objectively define if a market is trending or non-trending, sideways, is Directional Movement. This tool was devised by J. Welles Wilder in his groundbreaking 1978 book, New Concepts in Technical Trading Systems. Figure 5 shows a Directional Movement chart for IBM. Figure 5 shows the Directional Movement for IBM. The lower window shows the Directional Movement lines (red and green). When these cross each other they signal a trend change. The ADX line (blue) is the distance between the red and green lines.

Wilder advocated using a 14-day period, but it may make more sense to use a longer period such as 21 days to approximate a trading month. Most people quote the ADX value as defining the trend although Wilder's actual measure, which he termed ADXR, was the average of the current value for ADX and the ADX 14 periods ago.

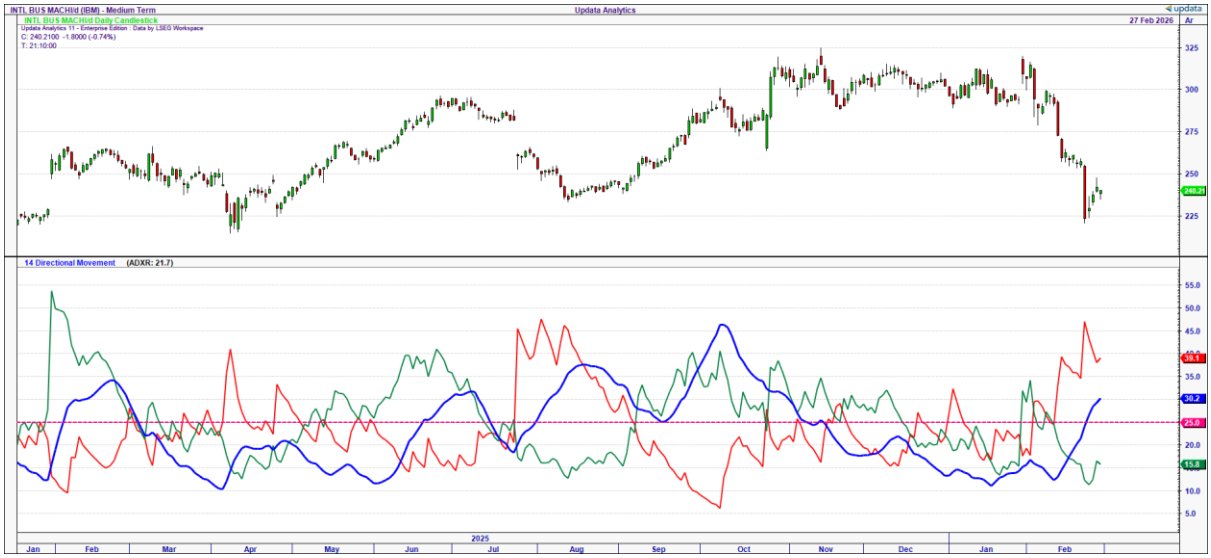

Figure 5 – IBM Medium Term Directional Movement – Chart: Updata Analytics, Data: LSEG

The Directional Movement rules for defining the trend are as follows:

Rising ADX(R)

- Between 15 - 25 Beginning of Trending, use trend indicators
- Between 25 – 45 Definite Trending – trend indicators
- Over 45 Trend over extended – price or indicator patterns

Falling ADX(R)

- Below 20 No trend, use oscillators
- Between 20 - 30 Consolidation – use oscillators
- Between 30 - 45 Correction likely – price or indicator patterns

Whilst these rules are potentially of value, the main limitation with using this technique for trend definition is that changing the variable, will change the results in defining the trend. Wilder's 14-days, which is the default setting on most systems, may be too short a period for reading the trends on most daily charts. Many analysts using Directional Movement fail to appreciate this and just accept the default setting of 14-days. Furthermore, do these settings carry well to different time frame charts. Directional Movement does effectively signal a change between bullish to bearish trends with the +DI and -DI lines crossing each other, but again getting the period to match the data effectively will be key. Most technical analysts use Directional Movement simply to differentiate trending or non-trending price behavior.

Ichimoku Cloud Charts

Ichimoku charts were devised in the 1930s in Japan. While the charts are complex to look at for the uninitiated, they are great for trend identification once they are learned and understood. Ichimoku translates to 'one look' and the value of these cloud charts is the trend can be assessed at a glance. The basic idea is price above the cloud is bullish and below the cloud is bearish. The shaded cloud area effectively infills between two averages.

The advantage here is that the width of cloud provides an area of price uncertainty rather than just a single line. This provides scope to consider that the trend is neutral when prices are in the cloud.

This is a brief summary of how to use Ichimoku clouds for trend identification. It is by no means exhaustive and there are many nuances that are beyond the scope of this paper.

There are five lines, each generated from price, on an Ichimoku chart as follows:

- The turning line – a midpoint average of the last 9 bars
- The standard Line – a midpoint average of the last 26 bars
- Cloud Span A – a midpoint of the turning and standard line values, shifted forward 26 bars
- Cloud Span B – a midpoint of the last 52 bars, shifted forward by 26 bars
- The lagging line – each bar's closing value shifted back by 26 bars

The turning and standard lines can be used in a similar way as moving averages crossing and prices will often find support or resistance on these lines as well. These averages are looking at the midpoint of trading across their period. This makes much more sense in 24-hour traded markets where the close assumed at midnight is purely arbitrary and not the close at all. What matters is the extreme points of the trading range. In sideways markets especially, prices in the cloud are trading in the range.

The main value of these first two lines is in their role in constructing the outer bands of the cloud. The cloud is effectively a combination of midpoint averages shifted ahead of the price. The Lagging line is the line of closing prices shifted back 26 bars. Many analysts find that the clouds are too noisy with the turning and standard lines drawn on the chart and find it best to remove them. The lagging line can also be toned down to a fainter line so that price and the cloud, the most important aspects of the Ichimoku chart, can be studied with more clarity. Figure 6 shows an Ichimoku chart of IBM with the first two midpoint averages removed and the lagging line shown as a fainter line making the chart easier to read.

The cloud forms a highly visual shaded area of support and resistance between the cloud spans on the chart. The simple interpretation is that if prices are above the cloud the trend is bullish and if they are below the cloud the trend is bearish. The cloud runs ahead of prices in the future and provides an area of support and resistance, rather than the more definite boundary of a line such as a moving average or bands.

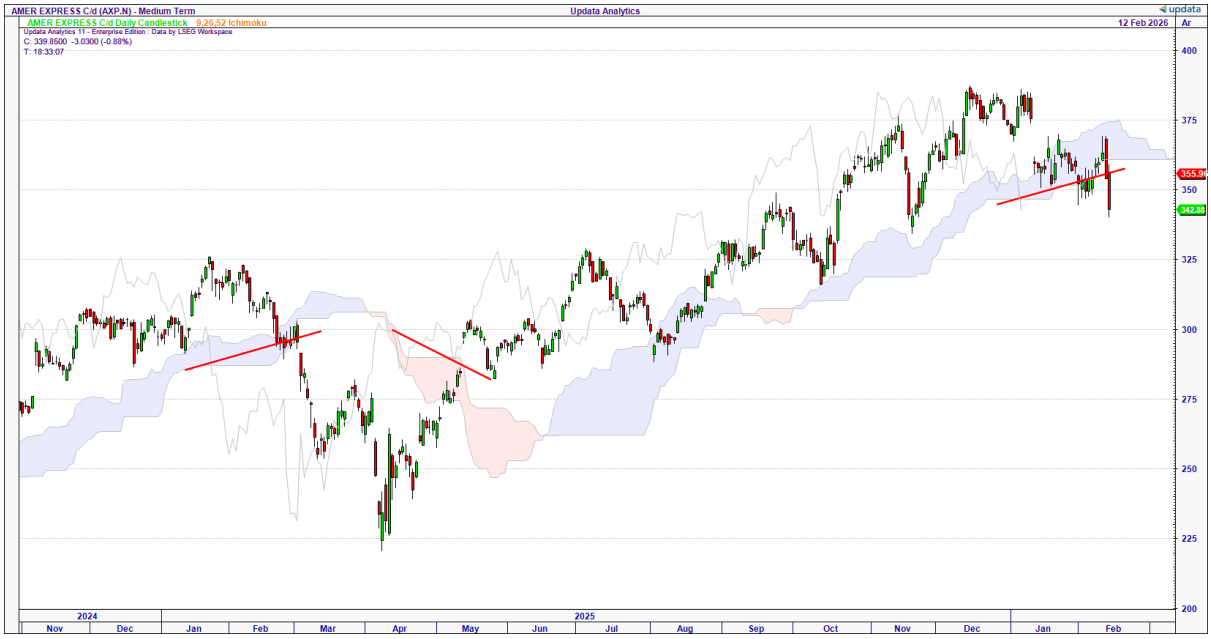

Figure 6 - Daily Ichimoku chart of IBM with the first two midpoint averages removed. Chart: Updata Analytics, Data: LSEG

Prices will likely find support in a cloud when they enter form above. In this instance the cloud will likely have the faster moving Span A above the slower span B and the cloud will be pointing upwards. Most systems shade the cloud in a bullish color such as blue here. The cloud edges, the top and bottom of the cloud, will often provide more precise lines of support in uptrends. If prices entered the cloud from above, then support is being tested and the trend is still bullish.

In the case of a downtrend, prices will likely find resistance in a cloud when they enter form below. In this instance the cloud will likely have the faster moving Span A below the slower span B and the cloud will be pointing downwards. The cloud is normally shaded in a bearish color such as pink here. The cloud edges, the top and bottom of the cloud, will often provide more precise lines of resistance in downtrends. If prices entered the cloud from below, then resistance is being tested and the trend is still bearish.

If a full transition from one side of the cloud to the other occurs, this marks a trend change. A move in prices from below the cloud to above the cloud marks a change in trend from bearish to bullish. The cloud, that was previously falling, provided an area of resistance will now be rising with rising prices and now provide an area of price support. Conversely, a move in prices from above the cloud to below the cloud marks a change in trend from bullish to bearish. The cloud, that was previously rising, provided an area of support will now be falling with falling prices and now provide an area of price resistance.

While the settings can be changed for the cloud construction, it is not recommended. Backtests show there is no advantage in doing this. The big advantage of the technique is that it is a highly visual mechanism for establishing if a chart is bullish, bearish or neutral in an instant. Figure 7 shows a daily chart of Nvidia with the trends marked on the chart.

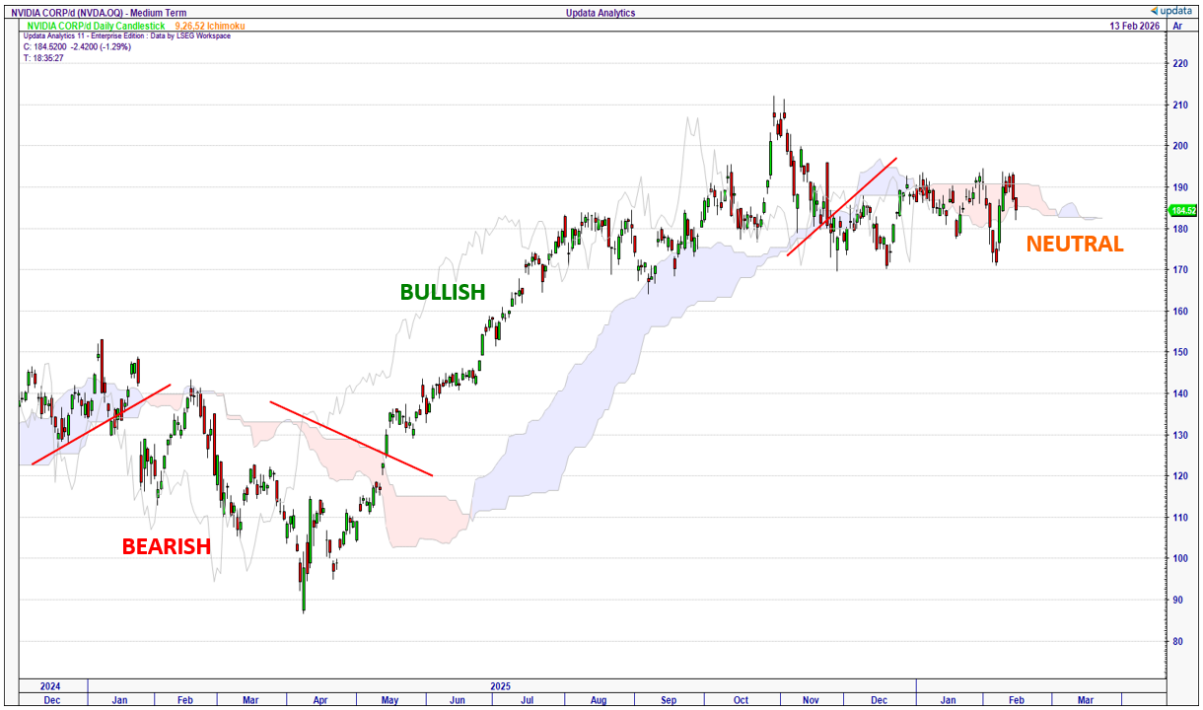

Figure 7 -Daily Ichimoku chart of Nvidia with trends marked

The Ichimoku cloud technique is trend following method of technical analysis which retrospectively signals tops and bottoms. Because it is trend following the charts are less clear in choppy rangebound markets. If the cloud is noisy in this way, then the trend is not up or down, but sideways and we have to wait for a break higher or lower from the sideways trading range for a new uptrend or downtrend to show itself against the cloud accordingly. It is frequently the case, that if prices are trading sideways this is the neutral phase between trends changing from bullish to bearish or vice versa. This signals a time of caution on that chart time horizon.

Multiple Time Frame Analysis

Because the trend can be assimilated visually very quickly, swapping the chart frames from daily to weekly and back to daily to hourly gives the trend states for medium term, long term and short-term time horizons respectively. Figure 8 shows Long Term Weekly, Medium Term Daily, Short Term Hourly charts for 3M.

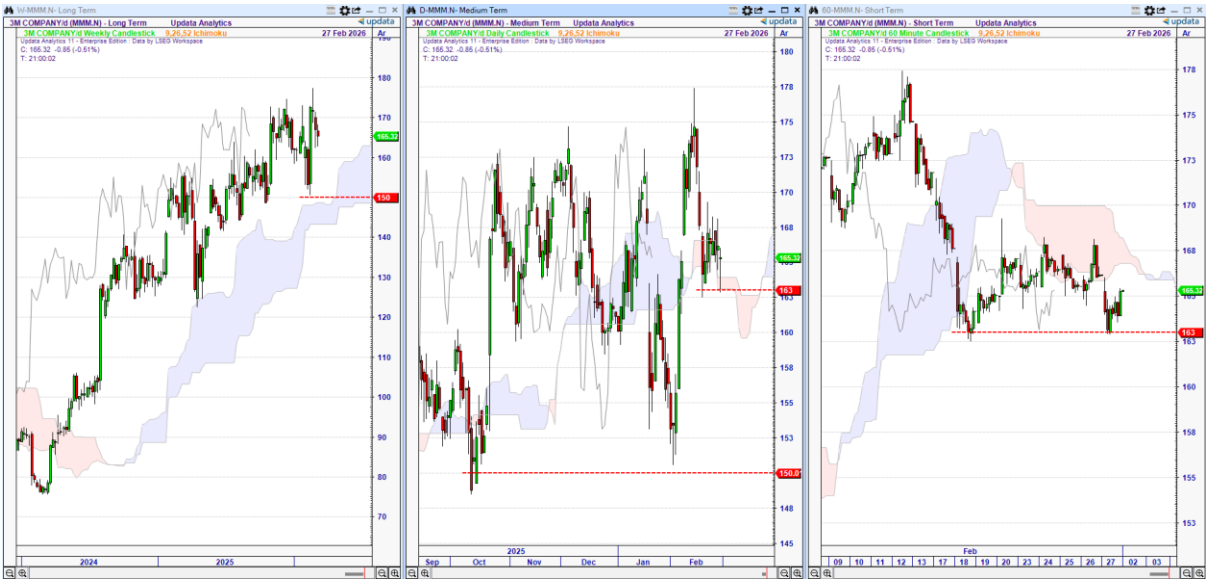

Figure 8 – 3M (MM) – Long Term Weekly, Medium Term Daily, Short Term Hourly charts

The long-term trend is clearly bullish with prices above the cloud. The assumption here is that the view of at least several months ahead is bullish. The medium-term trend, with prices in the cloud, is neutral and the short-term trend is clearly bearish. Investment decisions from a technical analysis perspective for this example will depend on time horizon. The weekly cloud base is around $150, and rising, giving quite a margin of pullback in price to live with. A pullback in price of this magnitude occurred in 2025 all the way back to the cloud before recovering to make new highs. Looking at the medium-term daily chart, prices are in a sideways consolidation phase. There is a support level from previous price lows around $150 as well. A move below here and the medium-term trend would be more clearly bearish below the cloud. This support level is also marked on the weekly chart and here, if a new high is not reached, a bearish top pattern would be given. The long-term weekly trend would still be bullish above $150, but the medium-term trend would be entering a clearer bear trend implying further falls in price in the weeks ahead. Again, the decision to ride out such falls would be determined by time horizon. The short term 60-minute chart turned bearish when the price fell through the cloud and a move below the current support level of $163 would be more bearish and a signal to watch the support levels on the medium-term daily chart. This example highlights the fact that using just one chart is not normally enough to make trading decisions. What can be said about 3M from these charts is that the stock is long term bullish, medium-term neutral, short term bearish.

Another unique aspect of Ichimoku cloud charts is that, because of the construction, the cloud extends ahead of the price. The averages often cross ahead of the price crossing the cloud which also acts as a warning and the cloud provides a ‘thinking time’ into the future. This provides a roadmap of where prices need to be in the future to maintain trend. Figure 9 shows the time horizon table with cloud extension for each time frame.

	ULTRA SHORT	VERY SHORT	SHORT TERM	MEDIUM TERM	LONG TERM	VERY LONG	ULTRA LONG
Time Horizon	Minutes	Hours	Days	Weeks	Months	Years	Many Years
Chart Frame	tick/1 Min	5/10 Mins	Hourly	Daily	Weekly	Monthly	Quarterly
Cloud Extends	30 Mins	2-4 Hours	3 Days	1 Month	6 Months	2 Years	8 Years

Figure 9 shows - time horizon table with cloud extension for each time frame.

The long-term trend is primary

As Charles Dow pointed out, over century ago, the longer-term trend is the dominant trend. This means that medium-term and short-term trends will normally be skewed in line with the long-term trend. The longer-term prevailing trends will normally have a bigger impact on the shorter-term trends and the shorter-term trends in price are usually just moves within the longer-term trend. But all trends eventually come to an end and in the case of the longer term turning, the shorter-term trends will have turned first. Because the long-term trend is the primary dominant trend, it pays, when conducting chart analysis, to look at the longer-term chart first.

Figure 10 – start with the weekly long-term chart, then medium-term daily, then short-term

Figure 10 shows the process of starting with the long-term weekly chart, before moving to the medium-term daily and then on to the short-term 60-minute chart. Once the long term-trend is clearly established, it is possible to swap back and forth looking at the medium-term and short-term trends. This process is similar to using a zoom lens on a camera. In order to know what to zoom into, it is necessary to have a wider depth of field to begin with.

Scoring the trends

While it is not normally possible to say with conviction that an instrument is bullish or bearish, measuring each of the different time frame trends does allow for a scoring system. With just these three time frames and three trend states to consider there are twenty-seven possible combinations. Figure 11 shows these variations. This highlights the complexity of defining the overall trend position when multiple trends on different time horizons may be in play. A method for defining overall trend strength is feasible by assigning more weight to the primary long-term trend and less to the short term to give an overall score. Giving positive scores for bullish trends, zero for neutral and negative scores for bearish trends as well provides one potential mechanism for defining overall trend. This method could be applied to other trend definition methods across the time frames, but the visual and objective quality of Ichimoku charts makes it the quicker and easier to establish than other techniques.

Long Term	Medium Term	Short Term	Score			Total
Bullish	Bullish	Bullish	3	2	1	6
Bullish	Bullish	Neutral	3	2	0	5
Bullish	Neutral	Bullish	3	0	1	4
Bullish	Bullish	Bearish	3	2	-1	4
Bullish	Neutral	Neutral	3	0	0	3
Neutral	Bullish	Bullish	0	2	1	3
Bullish	Neutral	Bearish	3	0	-1	2
Neutral	Bullish	Neutral	0	2	0	2
Bullish	Bearish	Bullish	3	-2	1	2
Neutral	Neutral	Bullish	0	0	1	1
Neutral	Bullish	Bearish	0	2	-1	1
Bullish	Bearish	Neutral	3	-2	0	1
Bullish	Bearish	Bearish	3	-2	-1	0
Neutral	Neutral	Neutral	0	0	0	0
Bearish	Bullish	Bullish	-3	2	1	0
Bearish	Bullish	Neutral	-3	2	0	-1
Neutral	Bearish	Bullish	0	-2	1	-1
Neutral	Neutral	Bearish	0	0	-1	-1
Bearish	Bullish	Bearish	-3	2	-1	-2
Neutral	Bearish	Neutral	0	-2	0	-2
Bearish	Neutral	Bullish	-3	0	1	-2
Neutral	Bearish	Bearish	0	-2	-1	-3
Bearish	Neutral	Neutral	-3	0	0	-3
Bearish	Bearish	Bullish	-3	-2	1	-4
Bearish	Neutral	Bearish	-3	0	-1	-4
Bearish	Bearish	Neutral	-3	-2	0	-5
Bearish	Bearish	Bearish	-3	-2	-1	-6

Figure 11 – A mechanism for measuring overall trend strength

This table uses a traffic light system and change could be shown each time the table is updated, using a bold font to indicate change for instance. When the trends align, such as bullish, bullish, bullish or bearish, bearish, bearish a stronger conviction is achieved as to whether prices will rise or fall respectively. When the trends are not aligned prices may fall before they rise or rise before the fall making price prediction more difficult. The position of price in relation to the cloud is easily determined such that a table for any list of instruments can be easily be generated with some simple programming either in software or with Excel formulas. Figure 11 shows, such a table for the Dow Jones Index constituents.

Dow 30 - Trend Sates

Name	Code	Mid	+/- Chg	% Chg	Long Term(W)	Medium Term	Short Term(60)	Tot
JOHNSON JOHNSO/d	JNJ.N	246.61	4.12	1.70	Bullish	Bullish	Bullish	6
MCDONALD'S COR/d	MCD.N	332.53	3.30	1.00	Bullish	Bullish	Bullish	6
THE TRAVELERS /d	TRV.N	304.44	-0.49	-0.16	Bullish	Bullish	Bullish	6
VERIZON COMMS/d	VZ.N	50.29	1.04	2.11	Bullish	Bullish	Bullish	6
HNYWL INTRTL O/d	HON.OQ	242.90	-1.07	-0.44	Bullish	Bullish	Bullish	6
COCA-COLA CO/d	KO.N	80.47	0.63	0.79	Bullish	Bullish	Bullish	6
NVIDIA CORP/d	NVDA.OQ	190.68	0.85	0.45	Bullish	Bullish	Bullish	6
AMGEN/d	AMGN.OQ	378.42	3.67	0.98	Bullish	Bullish	Bullish	6
CHEVRON/d	CVX.N	184.81	0.88	0.48	Bullish	Bullish	Bullish	6
MERCK & CO/d	MRK.N	123.47	1.21	0.99	Bullish	Bullish	Bullish	6
CISCO SYSTEMS/d	CSCO.OQ	77.55	-1.65	-2.08	Bullish	Bullish	Neutral	5
CATERPILLAR IN/d	CAT.N	758.96	-0.78	-0.10	Bullish	Bullish	Neutral	5
WALMART INC OR/d	WMT.OQ	125.61	2.62	2.13	Bullish	Bullish	Bearish	4
BOEING CO/d	BA.N	229.35	-2.68	-1.16	Bullish	Bullish	Bearish	4
SHERWIN-WILLIA/d	SHW.N	361.31	0.68	0.19	Bullish	Bullish	Bearish	4
PROCTER & GAMB/d	PG.N	164.27	3.49	2.17	Neutral	Bullish	Bullish	3
3M COMPANY/d	MMM.N	165.75	-1.31	-0.78	Bullish	Neutral	Neutral	3
GOLDM SACHS GR/d	GS.N	893.41	-28.83	-3.13	Bullish	Neutral	Bearish	2
APPLE INC/d	AAPL.OQ	266.22	1.64	0.62	Bullish	Bearish	Neutral	1
JPMORGAN CHASE/d	JPM.N	298.79	-12.00	-3.86	Bullish	Bearish	Bearish	0
AMER EXPRESS C/d	AXP.N	321.22	-24.96	-7.21	Bullish	Bearish	Bearish	0
AMAZON COM/d	AMZN.OQ	204.11	-6.00	-2.86	Neutral	Bearish	Neutral	-2
HOME DEPOT INC/d	HD.N	374.72	-7.53	-1.97	Bearish	Bullish	Bearish	-2
INTL BUS MACHI/d	IBM.N	247.06	-10.10	-3.93	Neutral	Bearish	Bearish	-3
VISA INC/d	V.N	311.72	-9.23	-2.88	Neutral	Bearish	Bearish	-3
WALT DISNEY CO/d	DIS.N	103.53	-2.05	-1.94	Neutral	Bearish	Bearish	-3
UNITEDHEALTH G/d	UNH.N	285.12	-4.88	-1.68	Bearish	Bearish	Neutral	-5
NIKE INC CL B/d	NKE.N	62.25	-3.15	-4.82	Bearish	Bearish	Bearish	-6
SALESFRC INC O/d	CRM.N	174.84	-10.32	-5.57	Bearish	Bearish	Bearish	-6
MICROSOFT CP/d	MSFT.OQ	386.66	-10.57	-2.66	Bearish	Bearish	Bearish	-6

Figure 11 - Table for the Dow Jones Index constituents. Source: Updata Analytics

The rules for defining trend state are:

- Bullish is when price and the lagging line are both above the cloud
- Bearish is when price and lagging line are both below the cloud
- Neutral is when either price or lagging line are in the cloud

These rules can easily be programmed into a spreadsheet using the 5 Ichimoku lines outlined and applied across a database of historical price data.

The time frames are scored as follows:

- Long Term Weekly Chart – Bullish – 3, Neutral = 0, Bearish = -3
- Medium Term Daily Chart – Bullish – 2, Neutral = 0, Bearish = -2
- Short Term Hourly Chart – Bullish – 1, Neutral = 0, Bearish = -1

This favours the longer-term trends and leads to a maximum positive score of 6, bullish on all time frames and a minimum score of -6, bearish on all time frames.

This methodology can be easily be applied to large universes of instruments which can then be ranked by clicking on the header of the total score column. This can sort an entire market, such as the Russell 3000 stocks from most bullish overall to most bearish.

The three time horizons could be changed, such as monthly, weekly and daily for a very long outlook or to daily, 60-minute and 10-minute charts for a shorter-term outlook. Other technical analysis criteria for defining trend, such as those already mentioned, could be used for scoring. More criteria could be added and ranking could be more granular using percentages. For example, Relative strength against an index, normalized to 100 from a given date and weighted to the time frames would give a wider range of scoring across a universe of stocks.

The key aspect of this scoring mechanism is the measure runs across multiple time frames to arrive at an overall view of instruments with a portfolio and across the market.
Trading such a system

In terms of making trading and investment decisions, a fund could set rules based around overall scores and most importantly how the scores are changing. For example, a long only fund may set a rule that the long-term trend always has to be bullish for all investments held. Looking at Figure 11, the top 5 entries, with a score of 3 or greater, would qualify. The sixth entry; Neutral, Bullish, Bullish, which also has a s score of 3, could be considered an opportunity to enter an investment on the basis that the shorter-term trends could drive the longer-term trend bullish as well. There are four other entries further down the table with a bullish long- term trend, but the shorter-term trends contain a bearish state, so this would not be tolerated for any long positions a fund might hold. These rules could be inverted for short trading, where the score would need to be between -3 and -6.

Assigning the largest score to the longer-term trend is in line with the first and sixth rules of Dow Theory, where the longer-term trend is primary and will have influence over the secondary and tertiary trends.

Position sizing and legging in and out of trades

The sweet spot for entering a long position is probably a state of Bullish, Bullish, Neutral where the short-term trend has turned from bearish. A trade could be entered on the move

to short-term neutral from short-term bearish on the basis that the longer-term bullish trends will likely impact the short-term trend. More certainty is likely when the shorter-term trend changes to bullish, but this will likely be less profitable as prices will have moved higher. Each scenario could be position sized differently presenting the possibility to leg into a trade.

Holdings could also be reduced on the basis of scores and how the trends are changing. The top two scores of 6 and 5 are likely no cause for action for a long only fund. The move to 4 could present a case for weighting a holding down, to 3 reducing a holding further. A move below 3 would be cause for exiting a holding completely. Again, for short trading, the inverse scores -6 to -3 would be for short positions. Note that the scores from +2 to -2 are the instruments where the trend is not strong and there is a higher likelihood of underperformance.

The legging in and out of trades in the manner described above is in line with the second rule Dow Theory in an attempt to capture the accumulation phase of a trend on entering long and distribution phase for long exit. The objective is to be in ahead of the participation phase, where the wider market becomes involved, and to exit before the wider market exits.

Money Management

Capital preservation is king for any fund and this scoring strategy ensures that the strongest trending instruments are held. There will be a minority of instances where it would have paid to wait it out for an instrument with a deteriorating score below 3 but there will also be many other opportunities to enter instruments with rising scores above 3. Here the likelihood of out-performance on average will be greater.

This strategy ensures that the strongest trending instruments across multiple time horizons are held.