MOVING AVERAGES' APPLICATION AS TREND ANALYSIS INDICATORS IN LONG-TERM CCYLES
MODULE LESSON 7

The purpose of this lesson is to determine additional long-term support and resistance areas by means of cycle-related moving averages. It is also to determine whether long-term trends are bullish or bearish via the use of multiple moving averages based on specific cycle lengths. Knowing the long-term trend enables one to create a long-term investment plan successfully.

In this lesson, we will review and learn the following:

1. The appropriate moving averages to use to determine additional long-term support or resistance areas in U.S. stocks
2. Cycles-based moving average combinations used to identify long-term cycle trends

APPROPRIATE MOVING AVERAGES TO DETERMINE LONG-TERM SUPPORT OR RESISTANCE

Long-term moving averages based upon cycle periodicities can be used to determine levels of support and resistance. The rules for which moving averages to use, and how to use them, are simple:

- Utilize a moving average (MA) that is half the length of the cycle you are analyzing.
- In a bullish cycle, that average will act as support for that cycle. If it is penetrated, it becomes resistance until after the new cycle is underway. If prices break below that average after the midway point of the first phase of a new cycle, it signifies the cycle has probably peaked, unless it can close back above this moving average before exceeding the low that began the cycle.
- In a bearish cycle, that moving average will act as resistance. If it is penetrated, the average becomes support until it is taken out again to the downside. If it is penetrated after the midway point of the first phase of that cycle, it signifies the cycle has probably bottomed, although that cannot be confirmed until prices exceed the crest of the prior cycle of the same type, or until prices continue making new highs after the first phase has been completed (cycle exhibits "right translation").

In the case of the U.S. stock market, a 108-month moving average is used to monitor the 18-year cycle. An 18-year cycle contains 216 months. One-half of 216 months is 108 months, and hence that becomes the appropriate moving average that can act as support (if bullish) or resistance (if bearish) to the 18-year cycle. The penetration of this moving average – a close below it - can be a confirmation signal that the crest has been completed. Once the market trades below it, then a close back above it can confirm the 18-year cycle low has been completed.

Likewise, a 6-year cycle is comprised of 72 months. The six-year cycle is the normal periodicity for the phases of the 18-year year cycle in a classical three-phase pattern. Hence, the appropriate moving average used to monitor the status of the 6-year cycle is 36 months, or one-half the length of the normal 6-year cycle.

The chart that follows depicts the 6-year cycle via the 36-month moving average.
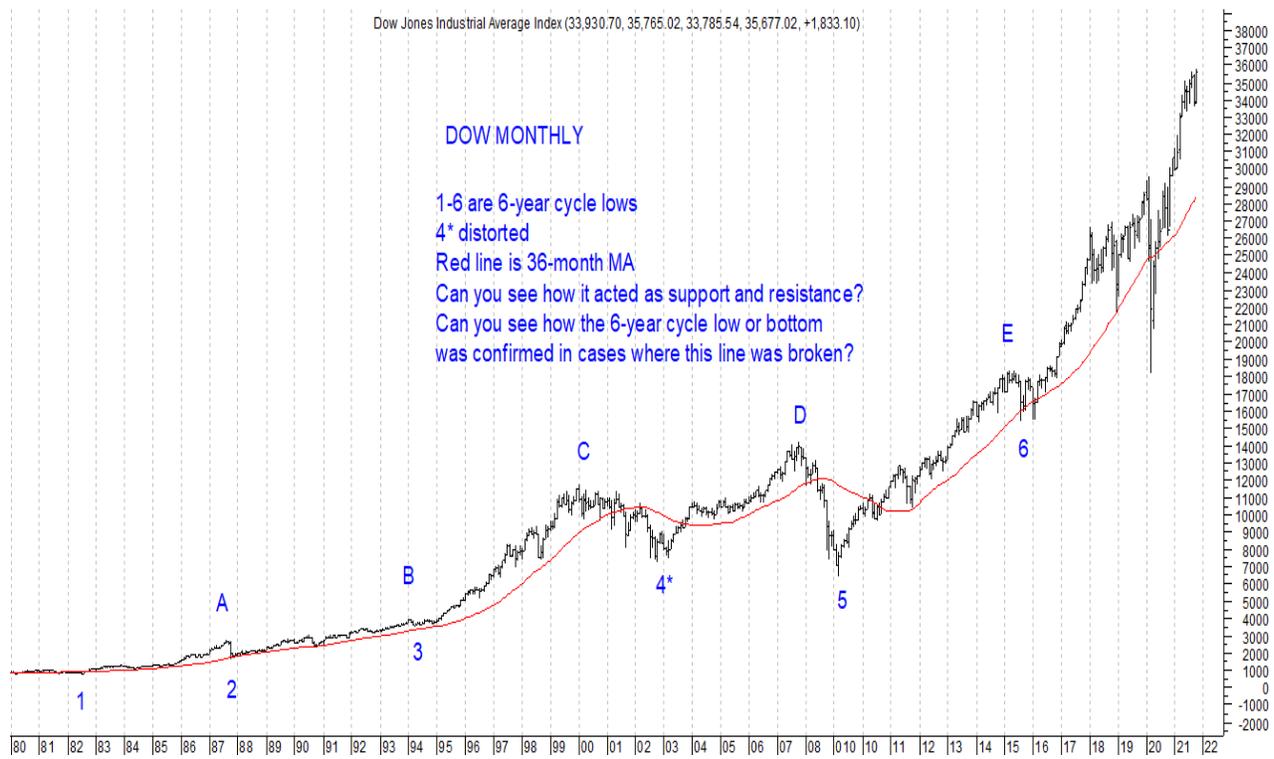
Note that shortly after the low in 1982 (1), the DJIA broke above the 36-month MA, thus confirming that low as the 6-year cycle trough. It then became support until 2001, nearly 20 years later. It was taken out at the 18-year cycle low in 1987 (2), but it never closed below there. Still, the inter-month penetration allowed us to confirm 'A' as the crest of a 6-year cycle. Yet the longer-term stock market cycle continued to be bullish as prices quickly returned above. It was not until 2001 that the DJIA began to close below the 36-month moving average, thus confirming C as a 6-year cycle crest (or even longer). As the DJIA headed to its long-term cycle low in October 2002 (4), the 36-month moving average acted as resistance. Thus, from the high of January 2000 to the low of October 2002 was a bear market, via the 6-year cycle. However, the new bull market (and the 6-year cycle low at 4) could not be confirmed until late 2003, after the DJIA began closing back above the 36-month moving average.

The 36-month moving average then acted as support through the all-time high of October 2007, and even into early 2008. In the summer of 2008, it finally broke, thus confirming 'D' as the crest of a 6-year cycle. The DJIA continued to decline until March 2009 (5). On the first challenge to this line in 2010, resistance was met. After a slight decline, it rallied again and this time it closed above, confirming March 2009 (5) as the trough of a 6-year cycle (which became the even greater 72-year cycle trough). The 36-month moving average was then tested at the low of October 2011, and it held as support.

CYCLES-BASED MOVING AVERAGE COMBINATIONS USED TO IDENTIFY LONG-TERM CYCLE TRENDS

Long-term cycle trends can also be determined via the use of certain combinations of moving averages. The rules for moving averages used in trend analysis studies are:
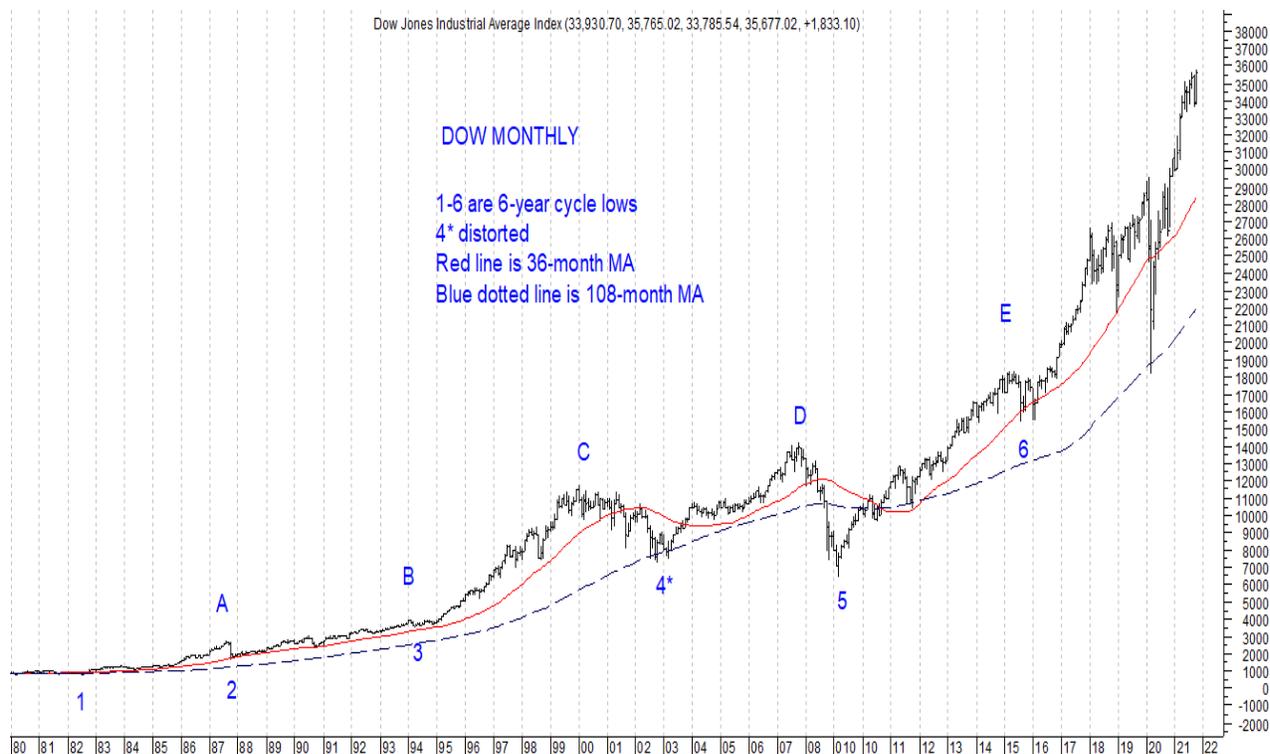
1. Utilize one moving average that is half the length of the longest cycle you are analyzing. When it is touched or penetrated, it is a confirming signal that the longer-term cycle has peaked in a bull market, or bottomed out in a bear market.
2. Use a second moving average that is one-half the length of either a two-phase or three-phase sub-cycle within that greater cycle.
3. In cases where both the one-half and one-third sub-cycle phases have been observed in the past, you can use three moving averages – one that is half the greater cycle length, one that is half of the half-cycle length, and one that is half of the one-third cycle length.
4. When the faster moving average is above the slower one(s), the longer-term cycle is still bullish – unless the price of the market is below the start of the greater cycle. It is especially bullish if the price is above both moving averages and the slower MA is above the longer MA. If not, it may be in a bearish phase of the longer-term cycle.
5. When the faster moving average is below the slower one(s), the cycle is bearish – unless the market is making new highs within the greater cycle. It is especially bearish if the price is also below each moving average. If the price is above both moving averages, it may be in the process of turning into a bull market where the faster moving average will soon move above the slower one.
6. When the end of a "phase" of greater cycle is unfolding, it is not uncommon to see the two moving averages very close to one another. The longer-term cycle is not really changing its trend unless the shorter average begins widening its distance away from the slower moving average, and the price is either above each (bullish) or below each (bearish).

EXAMPLE: THE TREND OF THE 18-YEAR STOCK MARKET CYCLE

An 18-year cycle is usually comprised of two 9-year sub-cycles (2-phase pattern), three 6-year sub-cycles (3-phase pattern), or a combination of each.

In devising a moving average study to identify a trend, start with an average that is one-half the length of 18 years, which would be 9 years or 108 months. Next, identify whether the 18-year cycle tends to unfold in a 2- or 3-phase pattern, or both. With the U.S. stock market, we often see both. So, let's construct three charts: one with a 108- and 36-month moving average, one with a 108- and 54-month moving average, and one with all three moving averages.

The first chart shows a 108- and 36-month moving average in the DJIA, representing half the length of the 18- and 6-year cycles respectively.

Dow Jones Industrial Average Index (33,930.70, 35,765.02, 33,785.54, 35,677.02, +1,833.10)

DOW MONTHLY

1-6 are 6-year cycle lows
4* distorted
Red line is 36-month MA
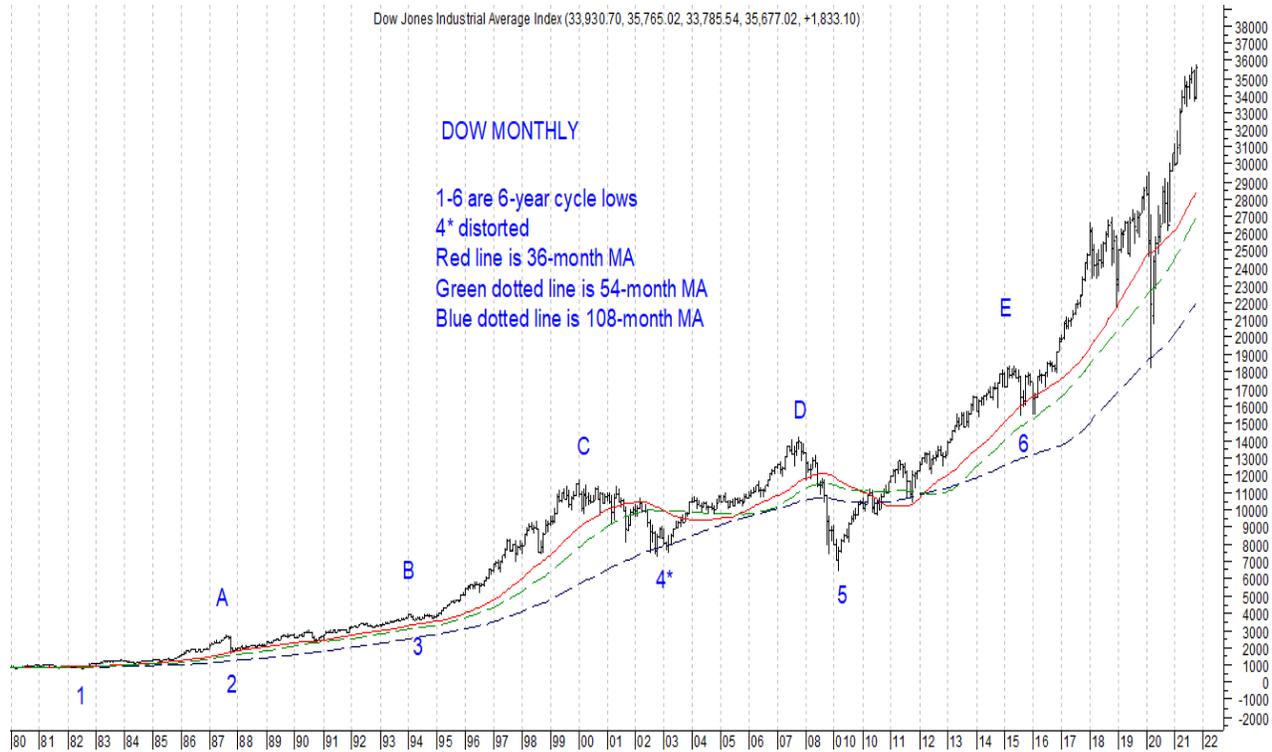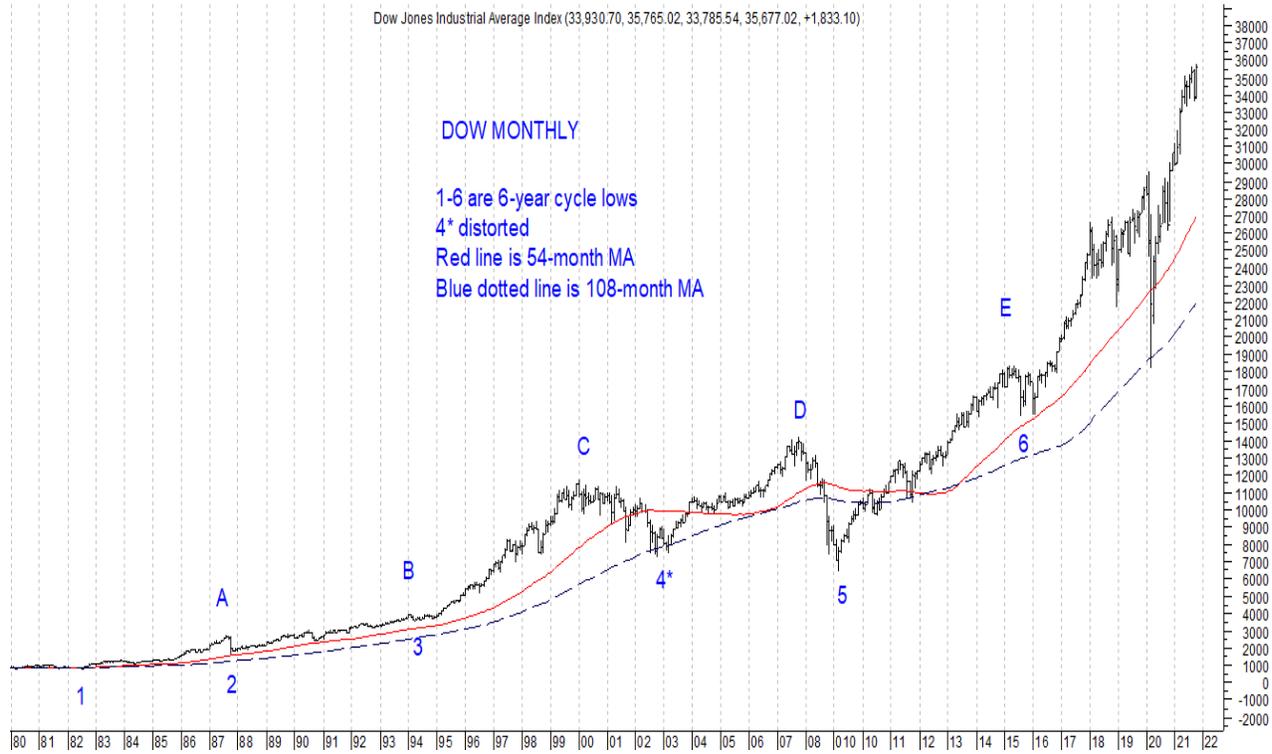Blue dotted line is 108-month MA

When the market touches or falls below the 36-month average, it usually confirms the crest of the 6-year cycle has ended, and the market is falling to the 6-year cycle trough. You will notice this at markers 1, 2, 4, 5, and 6, or at the lows of 1982, 1987, 2002, 2009, and 2015 respectively. It came close, but did not touch it, at the 6-year cycle low of 1994 (3).

The DJIA tested or penetrated below the 108-month cycle in 2002, 2009, and in 2020. Thus, either 2002 or 2009 could have been the 18-year cycle trough, as both were in the time band for it. 2020 could have been one too if 2002 was it. But history showed that a lower prince happened seven years later, so the latter low was the start of the 18-year cycle. It was also below this average in 1982, but the 18-year cycle low was not due then.

Notice when the 36-month moving average crossed below the 108-month average. Except for 1982, it only happened one time – September 2010 through March 2012. However, during that time, the DJIA was trading back above each average. The DJIA fell and tested these averages at the 4-year cycle low of October 2011, but it never fell below both. Shortly after, the DJIA traded back above each. Thus, this long-term indicator never validated a long-term bear market. In fact, the DJIA has never been in a long-term bear market, via this study, since the great bull market began in late 1982.

The long-term bull market is even more evident when using a 54-month moving average with the 108-month cycle, as shown in the next chart. This tracks the relationship of the 9-year cycle within the 18-year cycle. Note that the faster MA (54-month) never really got below the 108-month MA and even widened its distance, nor did the price of the DJIA ever break below both when the faster average was even slightly below the longer average. As such, there was never a need to exit from one's long-term stock portfolio since 1982. "Buy and Hold" has worked ever

since 1982. This supports the contention of brokerage houses that the stock market is such a good long-term investment. One cannot argue against this position since 1982.

Dow Jones Industrial Average Index (33,930.70, 35,765.02, 33,785.54, 35,677.02, +1,833.10)

DOW MONTHLY

1-6 are 6-year cycle lows
4* distorted
Red line is 54-month MA
Blue dotted line is 108-month MA

Dow Jones Industrial Average Index (33,930.70, 35,765.02, 33,785.54, 35,677.02, +1,833.10)

DOW MONTHLY

1-6 are 6-year cycle lows
4* distorted
Red line is 36-month MA
Green dotted line is 54-month MA
Blue dotted line is 108-month MA

The chart above shows all three moving averages relevant to the longer-term stock market cycle (18-year cycle or longer). It shows the 36-month average, which tracks the 6-year cycle phase; it shows the 54-month moving average, which tracks the 9-year cycle phase; and it shows the 108-month moving average, which tracks the 18-year cycle.

LESSONS FROM THE STUDY OF MULTIPLE LONG-TERM MOVING AVERAGES

One might ask: "Why even sell stocks if the long-term moving averages studies show that buy and hold has almost always worked?" The long-term cycle lows never really provided a long-term sell signal or bearish trend from these studies.

However, that perception does not recognize a basic principle of market awareness: bull markets go up in steps and bear markets come down in elevators. In other words, the history of the U.S. stock market shows that the steepest declines at the end of long-term cycles are very short in duration compared to the time required to rally to their previous peaks. By the time the sharp 50-90% declines are ending, the longer-term moving averages are just beginning to turn down. In the case of the big decline from January 2000 through October 2002, the 36- and 54-month moving averages never fell below the 108-month MA. In the case of the huge 54.4% decline from October 2007 through the low of March 2009, the 36-month moving average did eventually fall below the 108-month MA. However, by the time that happened, the DJIA was already above each, so it never became totally bearish.
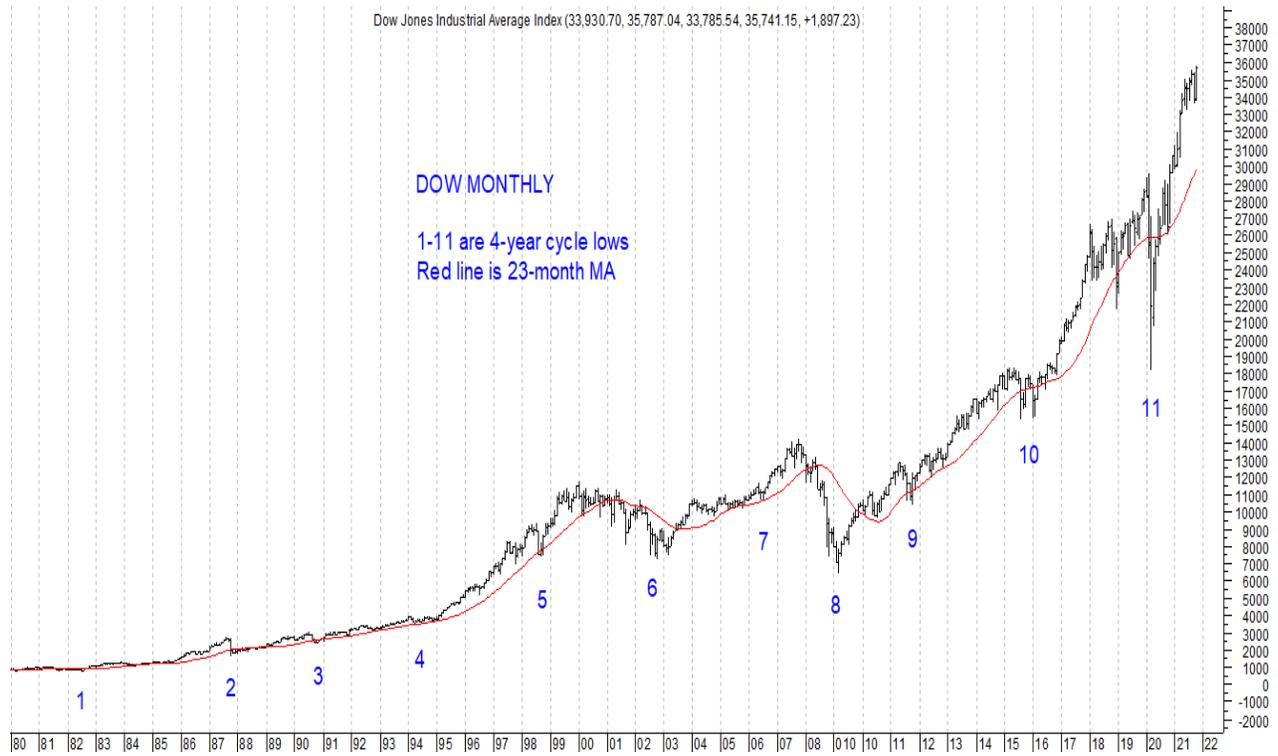
This demonstrates the market truism: you can make money faster if you are on the right side of a bear market, when the market is falling than you could by being long. However, you have to get short and then exit with great accuracy. On the other hand, you can make more money in the stock market in the end by simply remaining long and being patient. Or at least it has been that way since the stock market began.

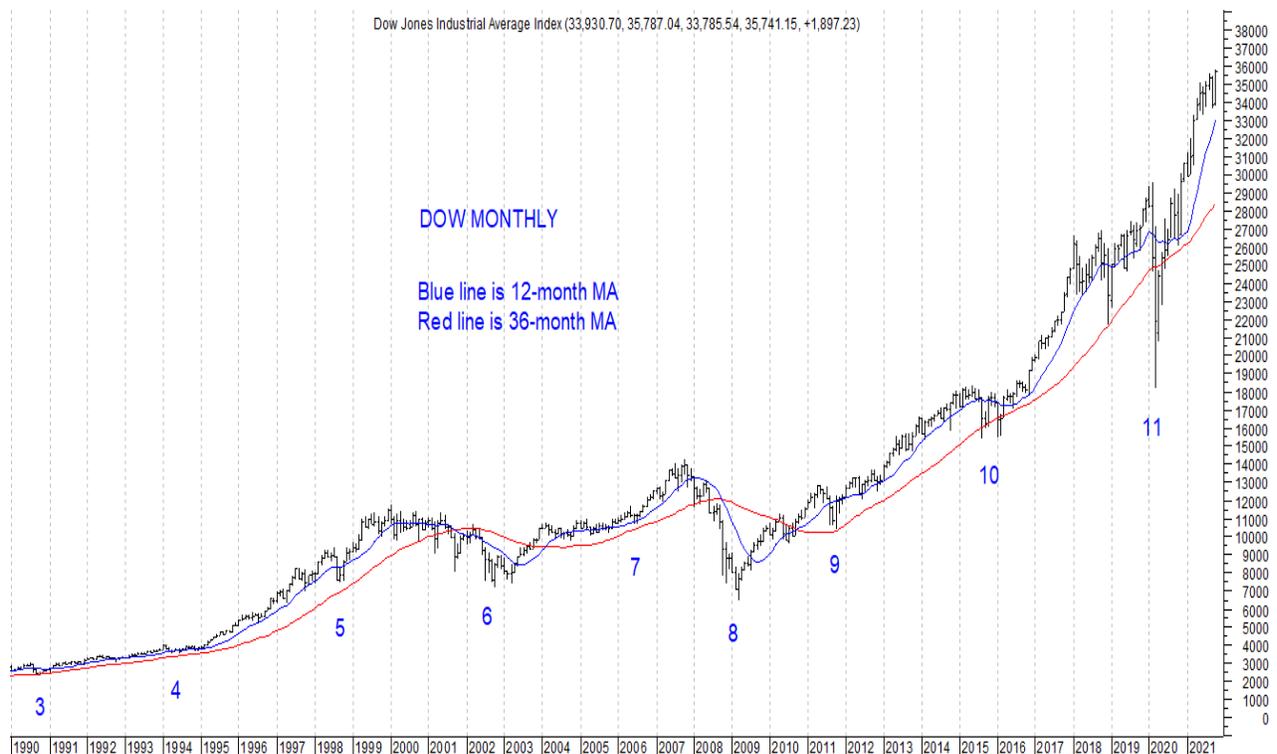## EXAMPLE: THE TREND OF THE 4- AND 6-YEAR CYCLES VIA MOVING AVERAGE STUDIES

Most investors do not buy and hold based on the 18-year cycle. That time frame is too long for many to hold positions in their investments. However, it seems that many investors are comfortable with buy and sell programs based on the 4- or 6-year cycles. Using those as our templates, there are a few periods of time when the stock market will be in a bearish trend.

We have already seen how valid the 36-month moving average has been as a point of support or resistance in the DJIA since 1980. This moving average tracks the trend of the 6-year cycle, and was shown earlier in this lesson. Likewise, we can use the 23-month moving average as a tracking indicator for the trend of the 46-month (or 4-year) cycle. That chart is shown next.

Here, one can see that each of the 4-year cycles (1982, 1987, 1990, 1994, 1998, 2002, 2006, 2009, 2011, 2015, 2020) either tested or fell below the 23-month moving average. So did the low of October 2011, shown as (9) on the chart. Although the length of that cycle was only 31 months, it could have been a contracted 4-year cycle trough simply because it witnessed a break of the 23-month moving average.

Dow Jones Industrial Average Index (33,930.70, 35,787.04, 33,785.54, 35,741.15, +1,897.23)

DOW MONTHLY

1-11 are 4-year cycle lows
Red line is 23-month MA

In the next chart, a 12-month moving average is used along with the 36-month. The idea here is to show periods when the 6-year cycle turns bearish. The 6-year cycle is often comprised of three sub-cycles, lasting 19-27 months each, or an average of 23 months. One-half of 23 months is actually 11.5 months, but since we cannot construct an 11.5-month moving average, we will round it off to 12 months, which is also one-third of 36 months.

Dow Jones Industrial Average Index (33,930.70, 35,787.04, 33,785.54, 35,741.15, +1,897.23)

DOW MONTHLY

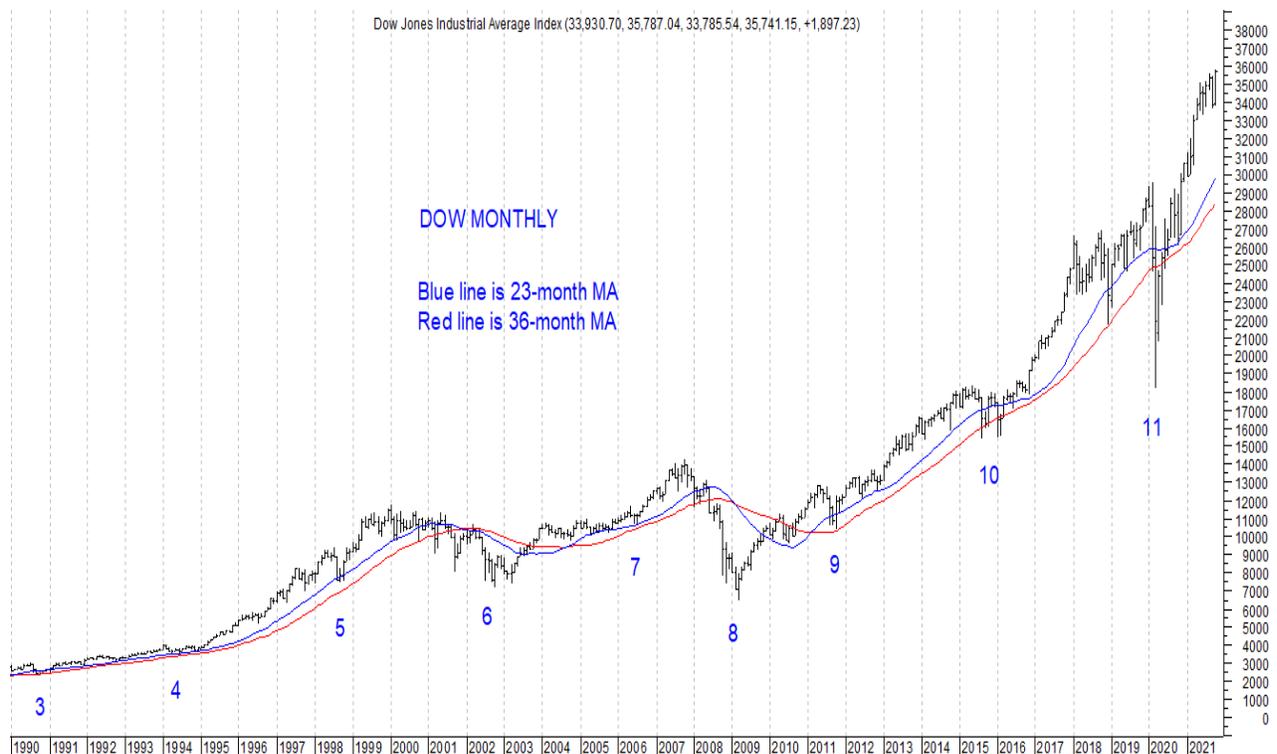Blue line is 12-month MA
Red line is 36-month MA

Here you notice once again that the DJIA was in a bullish trend, based on the 12- and 36-moving averages, from 1982 through the middle of 2001. It was only in mid-2001 that the 12-month moving average fell below the 36-month moving average. It remained below until early 2004. During much of that period, the 12- and 36-month moving averages served as resistance to rallies. Once it broke above the 12-month average in May 2003, well after the double bottom lows for the 4-year cycle in October 2002 and March 2003, the bottom was in. There were times that it went back and tested the 12-month moving average, but it did not close back below the longer-term 36-month moving average until mid-2008.

After the high of October 2007 (which was an all-time high), it broke below the 12-month MA in January. That then became resistance until after the 72-year cycle trough was completed in March 2009. The first "bullish trigger," indicating that the 4- and 6-year cycle lows were in, came in July 2009 when the DJIA closed above the 12-month moving average. The confirmation, however, was not realized until October 2010, when the 12-month moving average closed above the 36-month MA. Since that time, the 12-month has remained above the 36-month MA. It has been in a bullish trend.

What would the first bearish trigger be that suggests the 6-year cycle crest is in?

When would it confirm that the market turned bearish and the 6-year cycle crest was completed?

The next chart displays the interplay between the 23- and 36-month moving averages. Once again, both act as support or resistance to the 4- and 6-year cycles in stocks.

Dow Jones Industrial Average Index (33,930.70, 35,787.04, 33,785.54, 35,741.15, +1,897.23)

DOW MONTHLY

Blue line is 23-month MA
Red line is 36-month MA

This chart, with these two moving averages, is probably the clearest example of using two moving averages to determine the trend of the 4- and 6-year cycles, as well as demonstrating their effectiveness as support and resistance zones to the trend of those two cycles.

One important point illustrated here is that **in bull markets, support is at the lower of the two moving averages, even if the lower average is the shorter-term moving average**. It will act as support if the market is bullish, even if the longer-term moving average is broken on a decline. Notice this pattern occurred in 2010 and 2011.

In the first case (2010), the shorter 23-month moving average was still below the 36-month MA. The DJIA was briefly above each in early 2010, but then fell back below the 36-month. However, it did not break below the lower positioned 23-month MA. Shortly after, prices broke back above the 36-month MA. By early 2011, the 23-month moving average crossed back above the 36-month MA, and prices had moved above each, thus confirming the 6-year cycle trough was in as of March 2009. Shortly after that, in August 2011, the DJIA broke below the 23-month moving average, which was now trending higher than the 36-month MA. However, it could not break below the 36-month MA, which it tested and held at the low in October 2011, thus validating it as support. Within two months, the DJIA was back above the 23-month average, which was still above the 36-month MA, and the trend was clearly bullish again.

TABLE OF MOVING AVERAGE CALCULATIONS

Cycle Length	2-Phase Sub-cycles	3 Phase Sub-cycles	Cycle Length	First MA	Second MA*	Second or Third MA*
Years	1/2 Cycle in yrs or mos	1/3 Cycle in yrs or mos	Months (mos)	1/2 Cycle in months	1/2 Longest MA (mos)	1/3 Longest MA (mos)
18	9 yrs	6 yrs	216	108	54	36
9	4.5 yrs	3 yrs	108	54	27	18
6	3 yrs	2 yrs	72	36	18	12
4	22.5 mos	15.33 mos	46	23	12	
					*must also equal one-half of a 2-phase or 3-phase sub-cycle of that cycle	