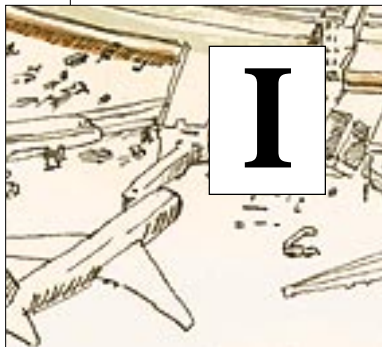


Compound Pivots And Market Symmetry

Many traders see only simple symmetry such as a 20-week bottom-to-bottom move followed by another. Unfortunately, if indeed there is another 20-week cycle, it could very well turn out to be 18 weeks or 22 weeks instead of the anticipated 20. Ermanometry, which was introduced to STOCKS & COMMODITIES readers in February 1999, considers a 20-day window, the four-week spread, to be of little help in today's complex markets. Compound pivots are measured in days instead of weeks and take into account that markets are both very precise and spherical in character. They can be used to reveal market symmetry in increments of days and to illustrate the fact that successive identical moves in three-dimensional space may appear noncontiguous on the plane. Here, compound pivots and balance points, both tools used for decoding the hidden symmetry of the markets according to Ermanometry, are explained.

by William T. Erman



Intermarket analysis and neural networks have popularized the advantages of applying analytical output from several markets to the analysis of just one. Ermanometry's compound pivots concept is another method of combining markets to generate more accurate projections when used for timing analysis. For example, there is a definite

symbiotic relationship between the critical paths of the Dow Jones Industrial Average (DJIA) and Standard & Poor's 500. A similar relationship exists between old-crop and new-crop agriculturals, different maturities in the financials, and in most other market categories. We'll use the DJIA and S&P to first look at the definition of compound pivots, and then we'll study some examples. Finally, we'll see how compound pivots can be effective in projecting future pivots.

COMPOUND PIVOTS

Say you are planning a round-trip flight: Chicago to New York to Chicago. You want to find out how long it will take both ways. However, you do not know which of the three metropolitan New York-area airports will be your takeoff and landing points. Your plane could land at Kennedy, take off from LaGuardia, do either from Newark, or land and take

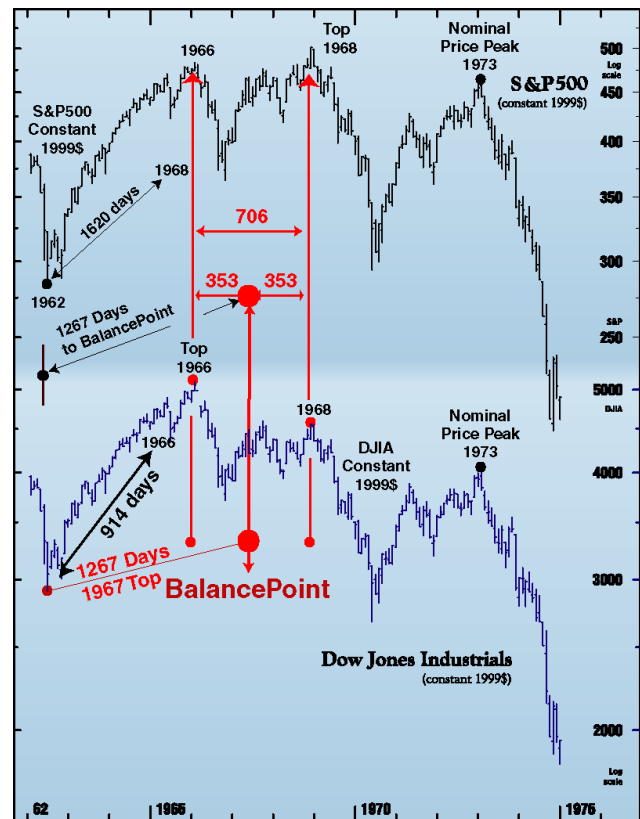


FIGURE 1: BALANCE POINT. A balance point in time is that day equidistant from the high (or low) of any two markets being measured. Here, there is a balance point in 1967, between the 1966 top in the DJIA and the 1968 top in the S&P 500.

off from the same airport.

Since flight time to the three airports will vary, and there's the possibility of different clearance and stacking times, you will have to consider all the alternatives and arrive at several different possible total times. When a market index takes off from a low, lands on a high, then heads down again, you can easily measure the elapsed time. When two indices are studied together and turn on different days — land at different airports, if you will — the elapsed time between each and every turning point must be measured.

It is not unusual for the DJIA and S&P 500 indices to record extreme, end-of-move, high or low intraday ticks on different days. If the indices have been rising or falling in concert, both are considered to be sharing the same market move. When the extremes are reached on different days, both days must be used for measurement purposes.

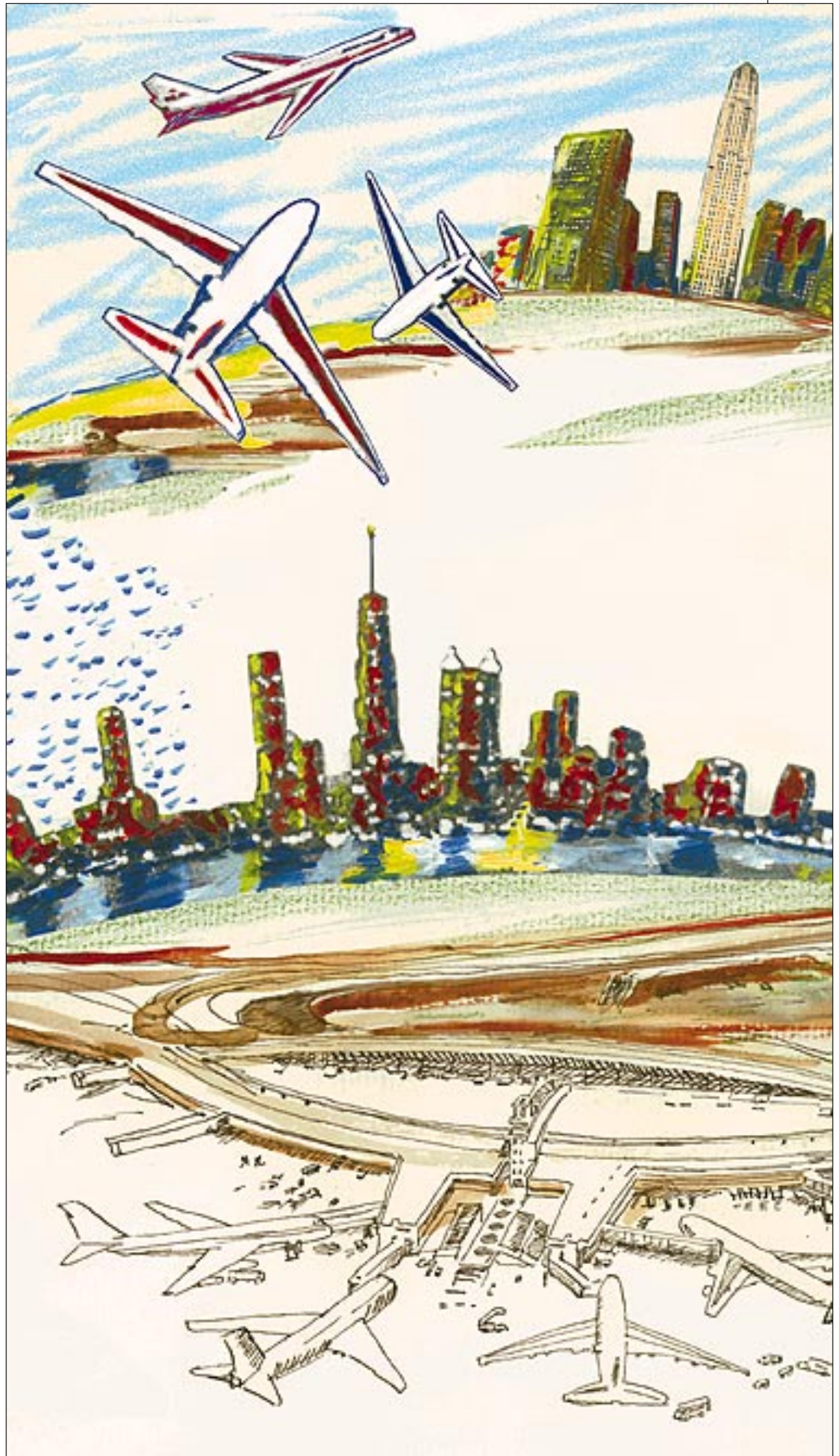
This set of pivotal days marks the beginning and end of a compound pivot (or a *CompoundPivot* in Ermanometry). This set is the outside pivot component of a compound pivot. It does not matter how many days separate the outside pivots, as long as both pivotal days are associated with the same market move. The outside pivots can span a period from as little as three days to more than 500. In addition to the two outside pivots, there is a third pivot component. This third is referred to as the balance point (*BalancePoint* in Ermanometry) because it is located precisely between the two outside pivots.

Figures 1 through 6 are some examples of compound pivots that illustrate the outside pivots and the balance points. Inflation-adjusted data shows the record high for the DJIA was made in 1966 and not exceeded until 1995. The move up to 1966 began in 1932; the same move in the S&P 500 did not top until 1968. Both indices participated in this macro move, and therefore, their respective 1966 and 1968 tops, although they are 706 days apart, are the outside pivots of a very large compound pivot. Figure 1 shows these tops and their related balance point.

This 1967 balance point is important to our thesis. Figures 2 and 3 have been included to illustrate the very major differences in market formations shown on constant dollar price charts and nominal price charts. Comparative charts for the S&P are used; the DJIA would appear almost the same, except it made its high in 1966, basis constant dollar data, and the 1980 high did not exceed the 1973 high, basis nominal prices.

The 1974 extreme intraday lows for the S&P and the DJIA were made on October 4 and December 9, a span of 45 trading days. Figure 4 shows these outside pivots and their related balance point.

In 1994, both the DJIA and S&P made major lows on April 4. Nei-



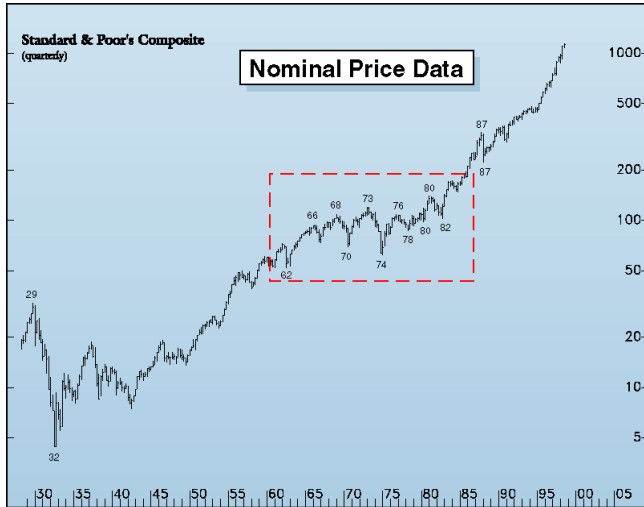


FIGURE 2: FORMATIONS. Compare this chart with Figure 3 to note the different formations generated by constant dollar data and nominal price data.

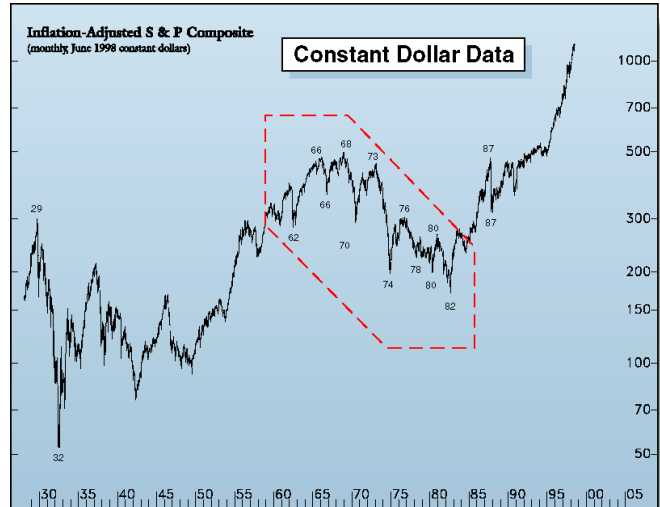


FIGURE 3: DJIA AND S&P 500. The DJIA and S&P 500 actually declined all the time from the mid-1960s to 1982, in constant dollars.

ther index has ever seen such lows since. However, those lows were severely tested later in the year and a compound pivot occurred. In Figure 5, we see that the DJIA made a major low on November 23 and the S&P on December 9, 11 days apart, creating a compound pivot. Figure 6 is a daily chart of the S&P for 1994; the DJIA is similar. The market dropped more than 10% from January to April 1994, but the significance of this important low is hard to comprehend on longer-

term charts. This low will be used in later examples, and that point, you may choose to refer back to Figure 6 to appreciate *why* it is considered so important.

Now that we've seen what a few compound pivots look like, let's examine our primary rule that govern their use and see why they can be so helpful in finding hidden symmetry and projecting future turning points in the markets:

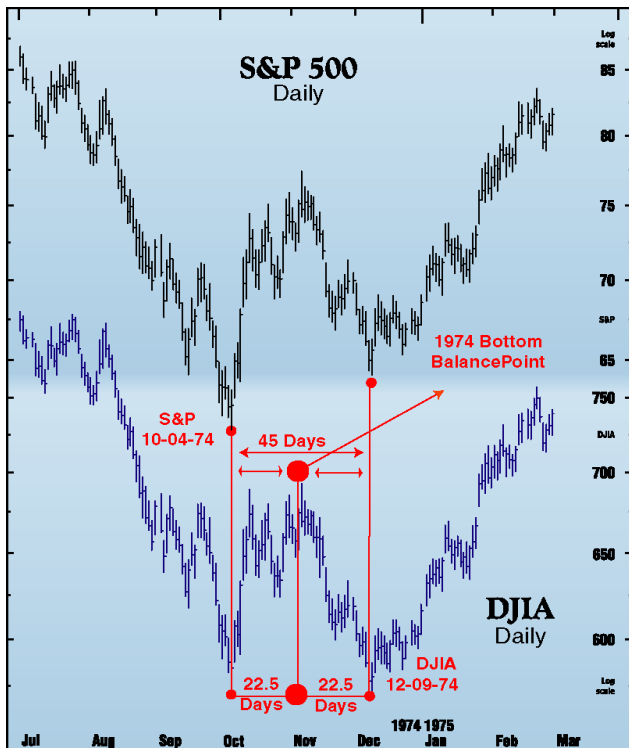


FIGURE 4: HIDDEN SYMMETRY. The balance point at the 1974 bottom reveals the hidden symmetry in the markets.

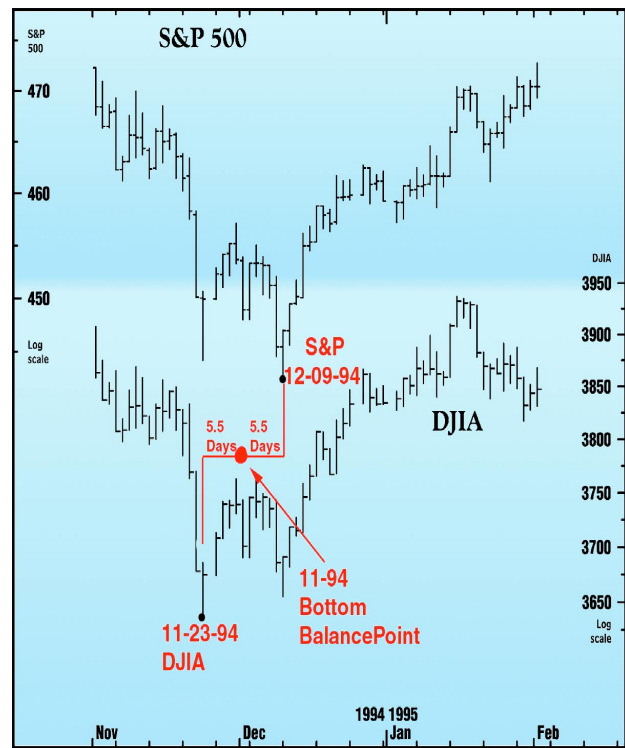


FIGURE 5: BALANCE POINT DISTANCE. This 1994 balance point is the same distance from 1982 as the 1974 balance point is from 1962.

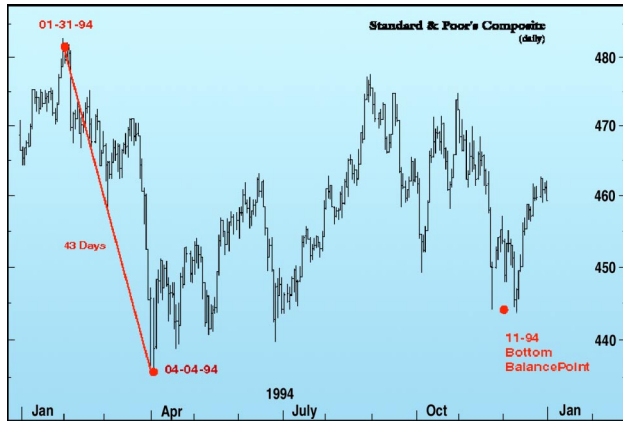


FIGURE 6: APRIL LOW. This daily chart covering 1994 places the late 1994 balance point in perspective. The importance of the April low can be clearly seen.

- The outside pivots and the balance point, a total of three points, must be used when searching for symmetry and projecting ahead.

This is triple the effort needed for just one pivot, when both indices reach their extremes on the same day. If both indices always turned on the same day and we had only simple pivots to work with, there would be no noticeable symbiotic relationship between them. It is this relationship, revealed through compound pivots and balance points, that can be so

helpful in decoding the markets.

The first two examples we'll see involve the major low in 1982. This low is a very small compound pivot, spanning only three days — August 9, 1982, and August 12, 1982. This is the reason that you will sometimes see two different day counts from this low.

The mix-and-match rule lets us use any or all of the pivots. From the 1962 low to the 1967 top balance point (Figure 1) is 1,267 days. From the 1962 low to the 1974 bottom balance point (Figures 4 and 7) is 3,115.5 days. From August 12, 1982, to the 1987 peak is 1,273 days. Ermanometry allows a maximum error margin of only two days, regardless of the length of the move being studied, and therefore the six-day difference between the 1962-67 advance and the 1982-87 advance would not qualify as symmetry. Close, but not quite.

It does make a revealing picture, though, and that's why it's shown on Figure 7. Though it may seem overly precise, these examples will illustrate that there are enough instances of near-perfect symmetry to eliminate the need for "close."

Figure 7 shows that the 3,115.5-day move was repeated from the August 9, 1982, low to the 1994 bottom balance point (Figure 5). Longer-term charts, such as Figure 2, show that late 1994 was the take-off point for a major acceleration of the market advance.

Although it could be said we have merely looked at two 12-year bottom-to-bottom cycles, two important elements of Ermanometry are illustrated by this single example. The 12-

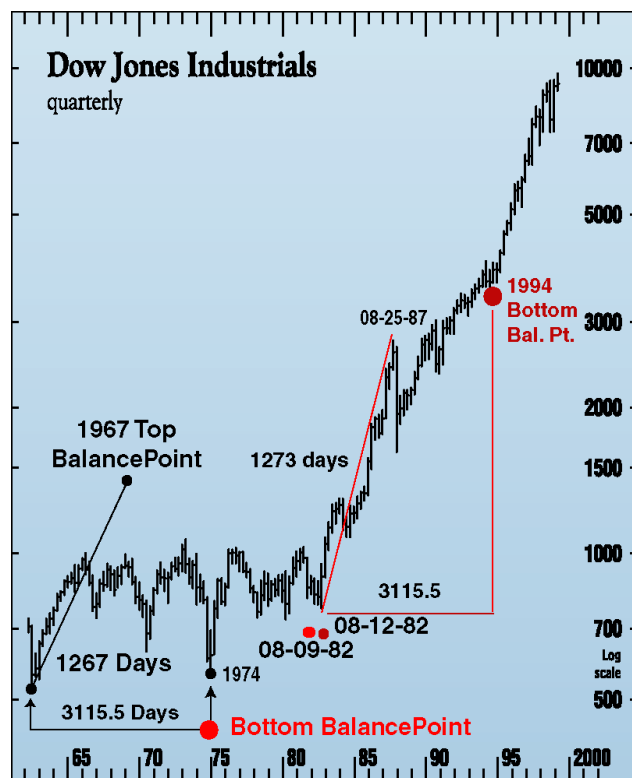


FIGURE 7: SYMMETRY DECODED. Here, you can see exactly how balance points decode hidden symmetry. The symmetry is noncontiguous, a common characteristic.

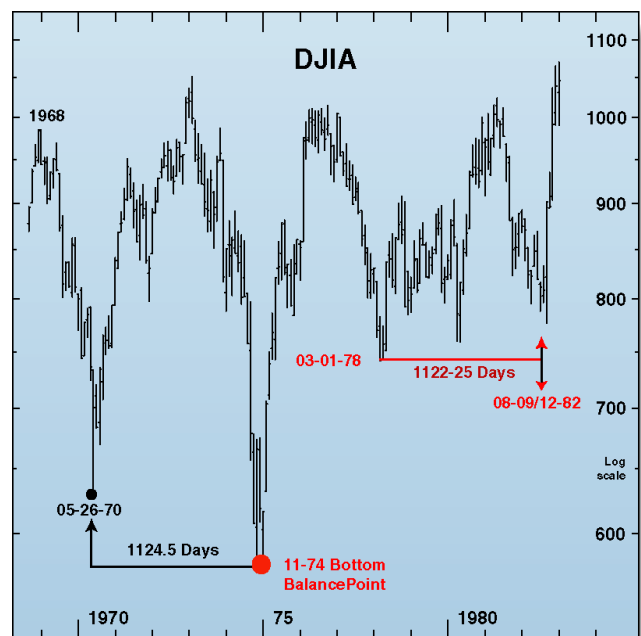


FIGURE 8: HIDDEN SYMMETRY. This is another example of the hidden symmetry involving the 1974 balance point.

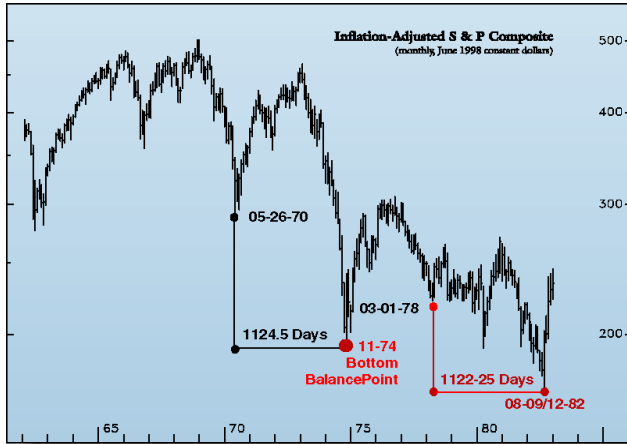


FIGURE 9: CONSTANT DOLLAR. Here's a constant dollar perspective on Figure 8.

year perfect-to-the-day moves would not be known without the knowledge and use of compound pivots in 1974 and 1994, and the symmetry is noncontiguous, an indication of spherical parameters projected on the plane.

Figure 8 shows the 1,124.5 days between the major low in 1970 and the 1974 bottom balance point. This move is repeated, 1978 low to 1982 low, and is another example of noncontiguous symmetry, invisible without knowledge of compound pivots. A different perspective for this move can be seen on a constant dollar chart in Figure 9.

Compound pivots occur quite frequently, but here, we will note only those of major historical importance, recent ones, or those useful for nearby projections. Figure 10 illustrates the balance point of September 1997. Later, we'll see how this pivot was helpful in confirming the October 28, 1997, low (Figure 13) and how it can be used for future projections. The intraday high ticks for the DJIA and S&P were 42 days apart.

An important compound pivot formed recently with a balance point in September 1998, between the September 1st intraday DJIA low and the S&P's on October 8, a span of 26 days. The action of the two indices during this period is shown in Figure 11; note the 0.618 relationship between this 26-day period and the 42 days for the 1997 tops (Figure 10). This is only one of several elements that can be used to anticipate the appearance of a new extreme in one index and a nonconfirmation in the other. The failure of one index to make a new extreme creates the second outside pivot required for the birth of a compound pivot. Of course, the nonconfirmation itself is a well-known indication of a turn.

The September 1998 bottom balance point played an important role in confirming the low of the S&P on October 28, 1998. Figure 12 shows that the balance point is 2,760 days from the crash low in 1987. From the August peak in 1987, back to the major peak on September 22, 1976, was exactly 2,760 days. Once the market turned up on October 8 and the balance point could be calculated, the 2,760-day noncontiguous symmetry became apparent. The symmetry covered 22 years and involved major past turning points. This made the



FIGURE 10: 1997 BALANCE POINT. Here's a recent balance point between the tops in 1997. This pivot was helpful in projecting the major 10/28/97 low.

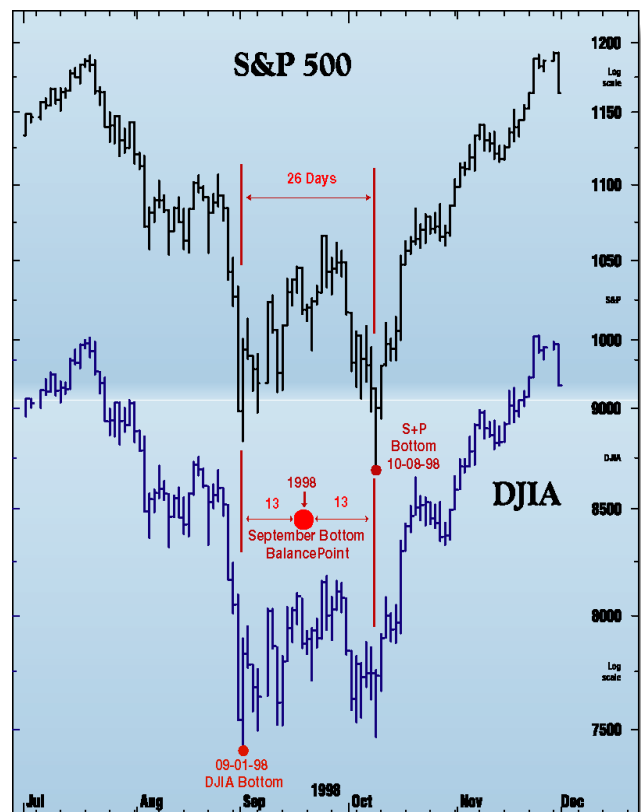


FIGURE 11: 1998 BALANCE POINT. This 1998 balance point was very helpful in confirming the S&P low, 13 days later.



FIGURE 12: NONCONTIGUOUS SYMMETRY. Here is major noncontiguous symmetry, going all the way back to 1976. This symmetry was a powerful confirmation of the 1998 balance point.

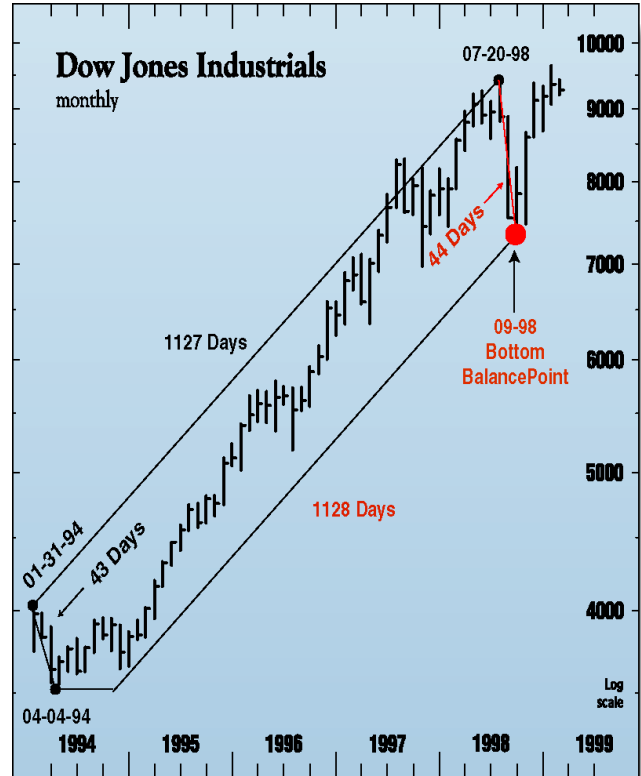


FIGURE 13: MORE NONCONTIGUOUS SYMMETRY. This is another example of noncontiguous symmetry involving the 1998 balance point. This example uses the 1994 low, and both of these pivots are used in the projections for April 12.

balance point very significant and solid evidence that the October 8th bottom was of note.

Figure 13 shows the September 1998 bottom balance point (also shown in Figure 11) was also within one day of perfect symmetry in another long-range formation, but this one only extended back to 1994. We had no way of knowing that the balance point even existed until the market turned up on October 8, but balance point knowledge would have been excellent confirmation of the October 8th bottom. Please refer to Figure 6 for the significance of the April 4, 1994, low.

The September 1997 top balance point (Figure 10) is 326 days from the very important top of May 23, 1996, that preceded the steep 36-day drop to July 16, 1996. The significant low of October 28, 1997, was 36 days from this balance point, and thus, 326 days from the July 16, 1996, low. This example of balance points decoding the hidden symmetry in the market appears in Figure 14. Other indicators must be used with timing analysis, and assuming they showed evidence of a turn on October 28, knowledge of this perfect symmetry would have been powerful confirmation.

DOUBLE COMPOUND PIVOTS

Next up are double compound pivots, which are quite simple. Figure 15 illustrates market movements for the DJIA and S&P during 1992 and the compound pivot with a 124-day span. This is of interest, since the balance point is 62

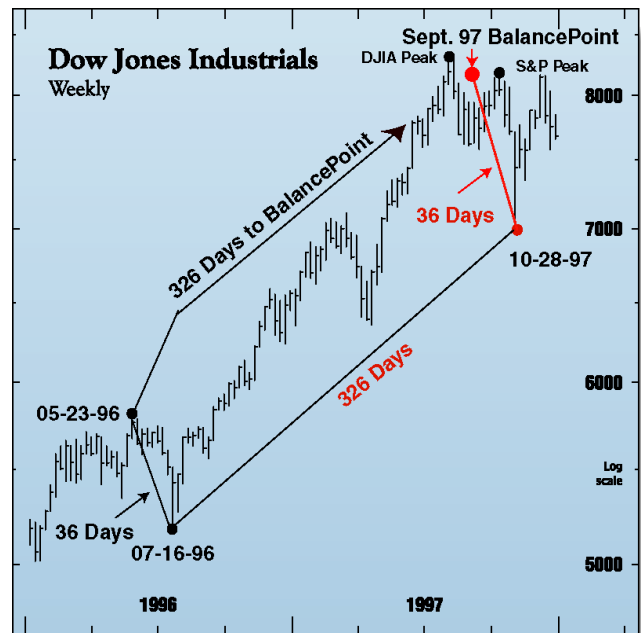


FIGURE 14: 1997 TOP BALANCE POINT. The 1997 top balance point was one of the factors projecting the 10/28/97 low. This balance point is also used to project the April 12th period, as shown later in Figure 21.

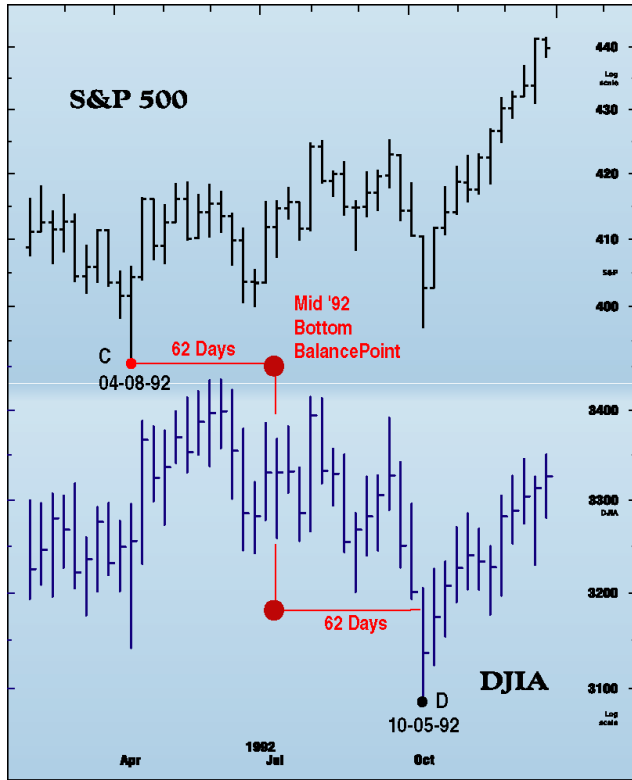


FIGURE 15: 1992 BOTTOM BALANCE POINT. The 1992 bottom balance point formation turned out to be a double compound pivot.

days from each outside pivot, and it was also 62 days from the 1990 peak to 1990 low.

In Figure 16, note that between points B and C there were 377 days, and this move was repeated between points D and E as 378 days, another example of noncontiguous symmetry. Knowing that the 1992 bottom balance point existed and that it was 439 days from the 1990 bottom at point B would have alerted the trader to watch for either simple or noncontiguous

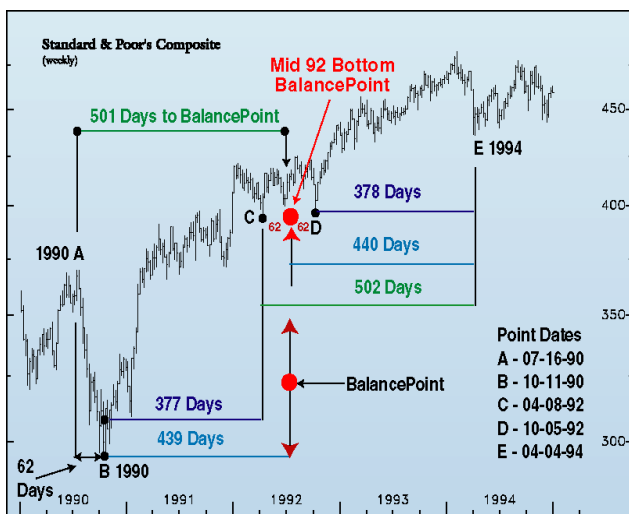


FIGURE 16: DOUBLE COMPOUND PIVOT. Once the balance point is calculated, three noncontiguous 62-day moves can be identified.

symmetry of approximately 439 days after the balance point.

From the bottom balance point to the April 4, 1994 (Figure 6), bottom did turn out to be 440 days. The first outside pivot, point C, was 377 days from the 1990 low at point B. When the 440-day move was completed at point E, it not only created simple symmetry with the balance point and point B, but noncontiguous symmetry insofar as the 378-day points D-E matched the 377-day points B-C, and that is why this referred to as a double compound pivot of the noncomplex variety. The reason for the overlap symmetry of the 501- and 502-day moves is merely a function of the third 62-day move, points A to B.

It is important to realize that a minor balance point, such as the one in mid-1992, can have important implications for a much larger period. Figure 17 shows the 1990-94 period without so much clutter to demonstrate the relative insignificance of the 1992 bottoms, the originating outside pivots, when viewed within the larger time frame affected by the balance point.



PROJECTING WITH COMPOUND PIVOTS

Now that we've seen how balance points were helpful in projecting or confirming the pivots of April 4, 1994 (Figures 15, 16, and 17), October 28, 1997 (Figure 14), and October 8, 1998 (Figures 12 and 13), let's look at

how the recent balance points can be used to project events for April 12, 1999. We'll also look back at the top balance point in 1967. Figure 18 is included, because it shows the symmetry that would be formed if a top occurs, and this would be additional confirmation. However, no balance points are involved in this example. If a pivot did occur, it would be 690 days from the July 16, 1996, bottom. The July 16, 1990, top was 691 days from the October 20, 1987, crash bottom. Thus, we would have noncontiguous symmetry within the two-day margin for error.

From the 1990 bottom to the September 1998 balance point is 2,007 days, and from the August 9, 1982, bottom to the 1990 top is 2,006 days (Figure 19). This is a good example of symmetry between two noncontiguous moves; one is bottom to top, and the other is bottom to bottom, an indication that spherical market time parameters do not differentiate between tops and bottoms. This symmetry, not mentioned previously, is another indication of the importance of the September 1998 balance point. Figure 19 is the first example of how a balance point can be used for projections.

A top on April 12, 1999, would be the end of a top-to-top move, 2,208 days, from the 1990 top. If this move is added to

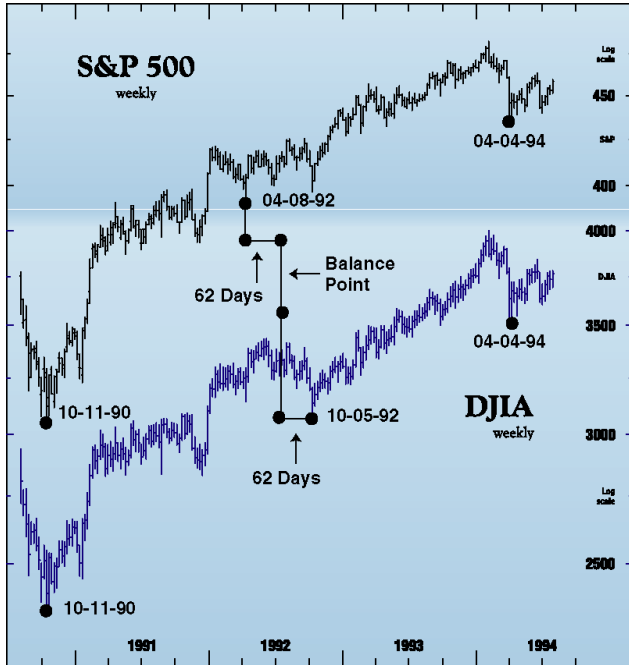


FIGURE 17: HIDDEN BALANCE POINT. A hidden balance point can influence a much larger time frame.

the 2,007 days between the 1990 bottom and the September 1998 balance point, the total of 4,215 days is only one day different from the entire move from the bottom on August 9, 1982, to April 12, 1999 — 4,214 days. One of the facets of Erman wave theory states that a single move may reappear as separate parallel moves. Note that both the 1990 top and bottom anchor these parallel moves. Take another look at Figure 12, which shows how the 1987 top and bottom were connected in a single formation.

Figure 20 illustrates how using the September 1997 top balance point (Figure 10) as the terminus for one of three parallel waves, and summing the days in all three, totals 2,067 days. This is equal to the number of days from the 1982 bottom to the 1990 bottom, the start of the first of the three parallel waves up.

Figure 21 illustrates another form of market move reincarnation in ErmanRays, another facet of Ermanometry, and uses the September 1998 bottom balance point (Figure 11) and the September 1997 top balance point (Figure 10). The number of days in all the rays combined, emanating back from the April 12, 1999, date — 903 days — equals the number of days from the April 4, 1994, bottom to the October 28, 1997, bottom, the terminus of the central ray.

There are 225 days between the October 28, 1997, bottom and the September 1998 bottom balance point (Figure 11). Figure 22 shows that multiplying 225 by the often-accurate Golden Mean ratio, 618, projects 139 days, which equates to April 12, 1999.



FIGURE 18: MORE NONCONTIGUOUS SYMMETRY? The advance from the crash low of the Gulf War peak lasted 691 days. If a top occurs around April 12, the advance from the 1996 summer low will be another example of noncontiguous symmetry.

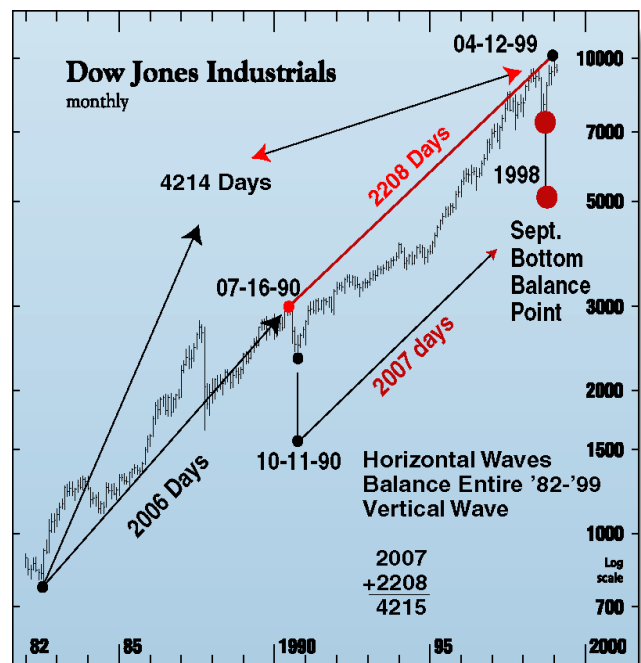


FIGURE 19: BALANCE POINT AND ERMANWAVE. Using the 9/98 balance point with ErmanWave theory projects April 12. Also seen is the noncontiguous symmetry, 2006 and 2007, and the spherical market time demonstrating that symmetry need not be bottom-to-bottom or top-to-top consistently.

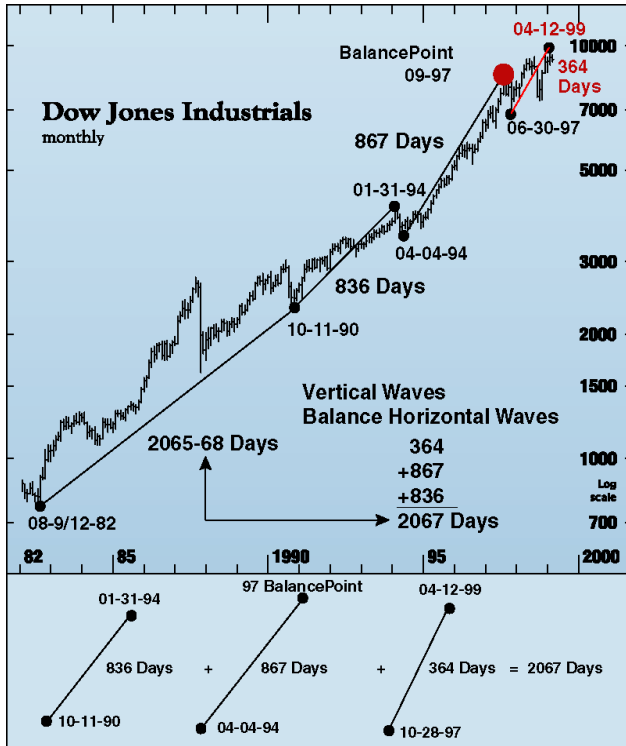


FIGURE 20: ERMANWAVE THEORY. ErmanWave theory states that a single straight line may reappear as three parallel lines. The 9/97 top balance point is used to terminate one of the vertical moves.

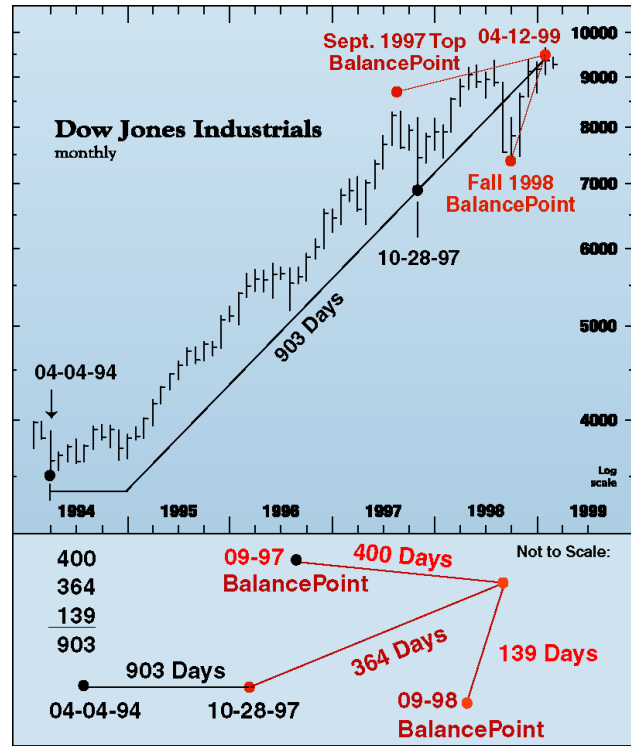


FIGURE 21: ERMANRAY THEORY. ErmanRay theory at work, demonstrating that three rays from a single point can equal a previous straight-line single move. Both 9/97 and 9/98 balance points are involved in this single example projecting the April 12th period.



COMPOUND PIVOTS AND SYMBIOSIS

The balance point of a compound pivot is really the medium of a time span delineated by the extreme reached by the DJIA on one side and the extreme of the S&P on the other. If we were to consider the two

indices together, a composite, then the balance point must be considered the true extreme top or bottom for the composite.

Now let's consider that there are really two such composites: One measured in constant dollars and one measured in nominal dollars. Years of research in diverse markets have revealed that there is a symbiotic relationship between the constant dollar composite and the nominal dollar composite. We'll use the macro advance from 1932 and one aspect of this symbiotic relationship to illustrate why the period centered on April 12 is very important.

Referring back, Figure 1 illustrates that the constant dollar composite peaked at the 1967 balance point. Figure 2 shows that the nominal dollar composite peaked in 1973. There was no balance point for the nominal dollar composite, because the DJIA and S&P both made their extremes on January 11, 1973. Figure 3 shows that after the 1966, 1968, and 1973 peaks, the

constant dollar composite trended down until 1982.

Although Figures 2 and 3 use only the S&P, the DJIA, in constant dollars, also declined until 1982 after peaking in the 1960s. The aspect of the symbiotic relationship between the constant dollar and nominal dollar composites that we will use is the comparison of their advances to the different peaks in 1967 and 1973. These advances will be measured from the most important lows, excluding 1932, prior to the peaks:

- 1962 is the most important low prior to the 1967 constant dollar peak. The advance measures 1,267 days (Figures 1 and 23).
- 1970 was the corresponding important low for the nominal dollar peak in 1973. The advance measures 665 days (Figure 23).
- The ratio between these advances is: $1,267/665 = 1.90526$
- The ratio derived here is used only when the constant dollar composite has exceeded its previous major peak. This has occurred. Now, we are looking for that point in the future when this ratio will apply to the number of days in the current advance from the 1982 bottom, and the total number of days from the previous constant dollar peak.
- April 12, 1999, is 8,021 days from the 1967 peak, and 4,211 days from the August 12, 1982, bottom. $8021/4211=1.90477$
- Using April 8, 1999: $8,019/4,209 = 1.90520$

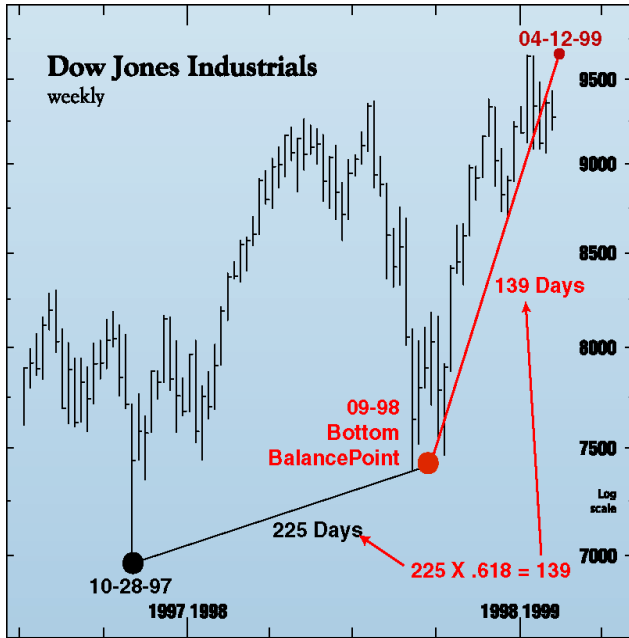


FIGURE 22: GOLDEN MEAN RATIO. A Golden Mean ratio using the 9/98 balance point also projects the April 12th period.

When that point is reached, both the constant dollar and nominal dollar composites are very likely to run into extreme turbulence.

The 1982 bottom was a compound pivot with a three-day span. There are too many different possibilities to project a precise day with this method, since the target area would span five days. However, combining this method with others provides a focus date of Monday, April 12.

Figure 23 illustrates the application of these rules. One of the subtleties of working with numbers is that sometimes working backward can change the results. Using the ratio of 8,021 divided by 4,211, 1.90477, and multiplying 665 by this ratio results in 1,266.67. Thus, the April 12, 1999, date becomes a perfect fit. However, this is fudging a bit. Figure 23 illustrates the steps outlined here.

Look at Figure 23 and realize that April 12 is exactly 1,267 days from April 4, 1994 (Figure 6). Not only does the mid-April period conform to one of the rules governing relationships between constant dollar and nominal dollar composites, a turn at that time would equal the advance from 1962 to the composite peak in 1967.

Figure 24 shows these moves on a chart spanning from 1962 to 1999. Nominal price data was used to illustrate the nominal price high in 1973. Therefore, the constant dollar low in 1982 does not appear as the lowest low. Refer to Figure 3 to refresh your understanding of this.

CONCLUSION

There are many more indications that something will happen within a few trading days of April 12, 1999. The current high in the DJIA was made on January 8, 1999. The S&P has already exceeded its high of that day. This is a powerful indication that the indices will be making new historic highs during the April



FIGURE 23: ADVANCE FROM BOTTOM. Note the 1,267-day advance from the 4/4/94 bottom. This is the identical number of days in the advance from the 1962 bottom to the 1967 balance point.

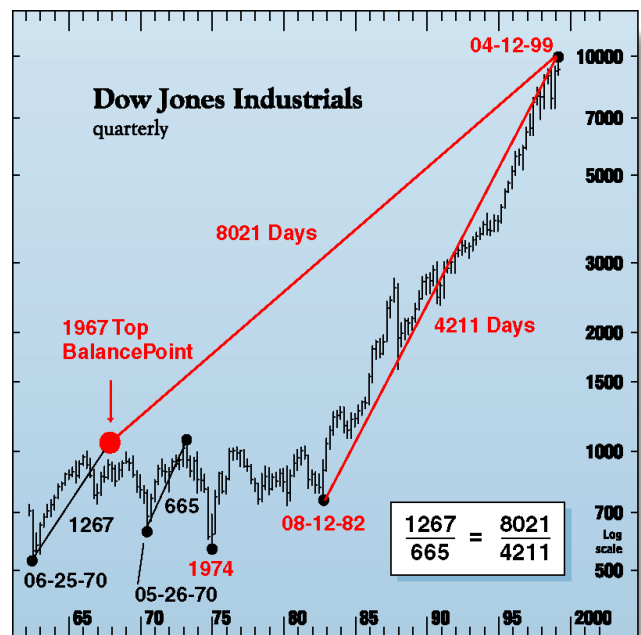
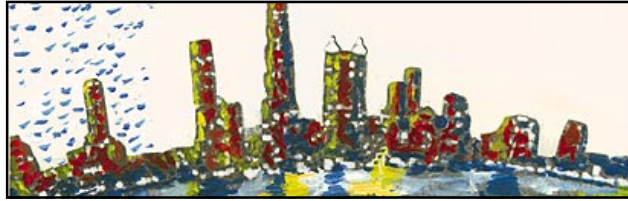


FIGURE 24: CONSTANT DOLLAR/NOMINAL DOLLAR RELATIONSHIP. Here's the entire picture of the symbiotic relationship between constant dollar moves and nominal dollar moves. It is very important when the same ratio is generated by the first two advances and the third advance with the move across the tops.



target period. If and when the DJIA exceeds its January high, the only hurdle left is the March 19, 1999 period. New highs made at that time could be the start of an important decline that would terminate during the April target time. Two Ermanometry concepts should be kept in mind:

- The indices must be making new extremes during the target period, or the projection is considered a nonevent.
- There is always the possibility that the target time will be the balance point of a compound pivot.

William T. Erman graduated from Harvard University in 1951 and has spent the last 30 years formulating new approaches to technical analysis. He is the founder of Ermanometry Research, an organization devoted to advising institutional

investors, hedge fund managers, and commodity pool operators. The author wishes to express his appreciation to Sam Hale, CMT, for his review and constructive commentary.

Charts were supplied by Topline Investment Graphics, PO Box 2340, Boulder, CO 80306-2340, 800 347-0157 (toll-free in the US), 303 440-0157, <http://www.topline-charts.com>.

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____ [1999]. "Log Spirals In The Stock Market," *Technical Analysis of STOCKS & COMMODITIES*, Volume 17: February.

†See Traders' Glossary for definition

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