

## Intraday Trading Technique

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### Intraday trade using gann angle principle

In my book on “**Gann Method**” though I have explained various principles of W.D.Gann’s method and its application on the stock market but the one which inspired me a lot is “Gann angle” principle. The Gann angle is defined as the set of trend lines drawn from an individual price point or from different price points (i.e. high, low, and midpoint) in order to identify the supports and resistances of a future price move. At this stage, do not worry much about this definition. It will become simpler as you proceed to the next part of this article. The next big thing about the gann angle trend lines are that they are drawn at a particular angle with respect to the X-axis or to the time line. This concludes the basic formation of gann angle trend lines.

Now let me explain this concept with the help of an example. Say I wish to draw a trend line at 1X1 (read it “one by one”) gann angle. This means my trend line is a

straight line drawn in the price time chart which makes an angle 45 degree with the X-axis. You must ask me that how I have derived the 45 degree. Quite simple! This is a trend line drawn assuming 1 unit of price change happens with 1 unit of time change. If I will plot 1 unit of price change with respect to 1 unit of time change in a semi log scale and measure the angle with the help of a protractor I will get the angular measurement as 45 degrees.

For making an intraday trade decision we need a point to make buy or sell entry. We need a stop loss point and couple of target points. Though this job can be done with any guess work but we need perfection. The perfection will be achieved only through the mathematical calculation which is accepted by the market.

W.D.Gann has given us 11 different trend lines which will guide us in making a trade decision. These trend lines are drawn based on the geometrical angle proportion in X and Y axis. For example the 2X1 (2 by 1) trend line is drawn assuming the 2 unit of price raise or fall happens in 1 unit of time. This trend line makes geometrical angle of 63.75 degrees with X-axis when drawn from a lower price point and projected towards the higher price points. Similarly this trend line will make 26.25 degrees with respect to x axis when it will be drawn from a higher price point and project towards the lower price point. This is the mathematical logic available in origin shifting, parallel line algorithm.

Now the 11 sets of trend lines from a lower price point towards the higher price point are as follows 1X1, 1X2, 2X1, 1X3, 3X1, 1X4, 4X1, 1X8, 8X1, 1X16 and 16X1.

The geometrical angle made by these trend lines with the X axis in an **up move** corresponding to **2X1= 63.75** degrees, 1X2= 26.25 degrees, 1X1= 45 degrees, 1X3= 18.75 degrees, 3X1= 71.25 degrees, 4X1= 75 degrees, 1X4= 15 degrees, 8X1= 82.5 degrees, 1X8= 7.5 degrees, 1X16= 3.75 degrees, 16X1= 86.25 degrees.

The geometrical angle made by these trend lines with the X axis in a **down move** corresponding to 1X2= 63.75 degrees, **2X1= 26.25** degrees, 1X1= 45 degrees, 3X1= 18.75 degrees, 1X3= 71.25 degrees, 1X4= 75 degrees, 4X1= 15 degrees, 1X8= 82.5 degrees, 8X1= 7.5 degrees, 16X1= 3.75 degrees, 1X16= 86.25 degrees.

### **Gann Formula for calculating the support and resistance:**

In gann study the 180 degree is considered as factor 1. This is because between the sun rise to sun set the solar motion happens approximately 180 degrees and it is considered as 1 day time.

The 2<sup>nd</sup> universal concept accepted by the financial analysts is that the supports are always calculated in a falling trend and it used to be calculated from the high.

The 3<sup>rd</sup> universal concept accepted by the financial analysts is that the resistances are always calculated in a falling trend and it used to be calculated from the low.

**Gann formula for calculating the support and resistance is as follows:**

- a. Support = (square root of (high)- Degree factor)<sup>2</sup>
- b. Resistance = (square root of (low) + Degree factor)<sup>2</sup>

**Trading Rules as per gann and as modified by me (Soumya Ranjan Panda Author of this article)**

- a. The 3<sup>rd</sup> support or resistance of any price move is important (as per W.D.Gann).
- b. In intraday trade 45 degree support break (1X1 support) will favor sellers and 45 degree resistance (1X1 resistance) break will support the buyers. Provided the annual volatility of the trading instrument must be higher than 50% (as per my own research )
- c. In low volatile or medium volatile market (i.e. the annual volatility of the trading instrument is less than 50 %) the (1X4= 15 degree) resistance and (4X1=15 degree) support must be utilized for long and short entry provided no congestion or entry error should be present in the calculated price. (as per my own research )
- d. If sell entry price at 15 degree or at 45 degree greater than buy entry price at 15 degree or 45 degree price

point then it is considered as error and rectified by changing calculation procedure from the high and low to mid point of high and low. This says that instead of calculating the supports down from high and up from low you can calculate the same from the mid point of high and low (as per my own research )

- e. If the price unit of the trading instrument is a 4 digit number then between the buy entry and sell entry price at least 5 unit difference is required to take unbiased decision as per this principle or else it is considered as congestion and it is rectified by changing the high and low to mid point. (as per my own research )
  
- f. If the price unit of the trading instrument is a 3 digit number then between the buy entry and sell entry price at least 3.5 unit difference is required to take unbiased decision as per this principle or else it is considered as congestion and it is rectified by changing the high and low to mid point. (as per my own research )
  
- g. If the price unit of the trading instrument is a 2 digit or single digit number then it must be converted to 4 digit number by the way of multiplying it with 10 or 100 or even with 1000 and the resistances and supports will be derived from the 4 digit number. And the results need to be dividing by the multiplier to reconvert it back to its original form. (as per my own research )

- h. The smallest time interval in which you can identify the high and low is 5 minutes after the opening bell or the highest time interval you can consider is the 1<sup>st</sup> 15 minute after the opening bell. Any auction period must be ignored. Like now in Indian market 9 a.m. to 9 :15 is considered as call auction period. Hence the data from 9 a.m. to 9:15 a.m. must be ignored (as per my own research )
- i. If any trade of yours triggers the stop loss or trailing stop loss then do not reenter the trade in the same direction again.

As a day trader speculation is my profession and I will follow these calculations like religious testimony.

**Example: on 11<sup>th</sup> November 2010 SBI between 9:15 to 9:30 a.m. made high 3238.35 at 9:16 a.m. low 3214.10 at 9:27 a.m. below given the intraday chart for your reference.**



Below given are the calculation of resistances and supports for reference.

			<b>Low</b>		<b>High</b>		
			3214.1		3238		
	<b>Degree</b>	<b>Degree</b>	<b>Resistance</b>			<b>Degree</b>	
		<b>Factor</b>				<b>Factor</b>	

16X1	86.25	0.479166667	3268.6604	1X16	86.25	0.479166667	3184.0442
8X1	82.5	0.458333333	3266.2787	1X8	82.5	0.458333333	3186.3958
4X1	75	0.416666667	3261.5178	1X4	75	0.416666667	3191.1015
3X1	71.25	0.395833333	3259.1387	1X3	71.25	0.395833333	3193.4557
2X1	63.75	0.354166667	3254.383	1X2	63.75	0.354166667	3198.1667
1X1	45	0.25	3242.509	1X1	45	0.25	3209.9592
1X2	26.25	0.145833333	3230.6567	2X1	26.25	0.145833333	3221.7735
1X3	18.75	0.104166667	3225.9219	3X1	18.75	0.104166667	3226.5053
1X4	15	0.083333333	3223.5558	4X1	15	0.083333333	3228.8725
1X8	7.5	0.041666667	3218.8262	8X1	7.5	0.041666667	3233.6095
1X16	3.75	0.020833333	3216.4626	16X1	3.75	0.020833333	3235.9793

(You can download a ready made free to use gann angle calculator from our web site from the following link <http://www.smartfinancein.com/free-software.php> . The paid calculator which is given along with the master course validates more number of logical conditions and infuses more number of gann principles in the decision making so as to give you greater success in intraday trade.)

As per the above discussion and calculation procedure we have made the calculation of resistances and supports. As per the current volatility condition we are being advised to buy the stock at 3223.5558 or sell at 3228.8725. This is violating the point D trade principle and considered as an entry error henceforth we will change the high and low to its mid point and do the calculation from the mid point the mid point of 3238.35 and 3214.10 is 3226.225 . The modified calculation table is as follows.

			Low		High		
			3226.225		3226.225		
	Degree	Degree Factor	Resistance			Degree Factor	
16X1	86.25	0.479166667	3280.8878	1X16	86.25	0.479166667	3172.0214

8X1	82.5	0.458333333	3278.5016	1X8	82.5	0.458333333	3174.3685
4X1	75	0.416666667	3273.7318	1X4	75	0.416666667	3179.0654
3X1	71.25	0.395833333	3271.3482	1X3	71.25	0.395833333	3181.4151
2X1	63.75	0.354166667	3266.5837	1X2	63.75	0.354166667	3186.1172
1X1	45	0.25	3254.6874	1X1	45	0.25	3197.8876
1X2	26.25	0.145833333	3242.8129	2X1	26.25	0.145833333	3209.6796
1X3	18.75	0.104166667	3238.0692	3X1	18.75	0.104166667	3214.4025
1X4	15	0.083333333	3235.6986	4X1	15	0.083333333	3216.7653
1X8	7.5	0.041666667	3230.9601	8X1	7.5	0.041666667	3221.4934
1X16	3.75	0.020833333	3228.5921	16X1	3.75	0.020833333	3223.8588

As per the modified calculation we are advised to buy at 3235.6986 for final target 3280.8878 and sell at 3216.7653 for final target of 3172.0214

Trade outcome:

1. At 9:34 a.m. We got a chance to sell at 3217 and kept out stop loss at 3235.70 this as per our calculation. Upon achieving the 1<sup>st</sup> target 3214.4 we trail to stop loss to 3216.80, then upon crossing the 2<sup>nd</sup> target we trail the stop loss to 3214.40. Unfortunately after touching the low 3211 at 9:39 a.m. the trailing stop loss triggered at 3214.40 and we just bagged less than +3 points.
2. Considering our short trade adventure is wrong and as per the last protocol set in the trade rule we waited for the 3235.70 to come which we have got a chance at 10:07 a.m. and achieved till 3254 till 11:27 a.m. which is close near to our 45 degree target point.

If you are not quick in changing the stop loss also it will not dampen your trade performance.

In this case if my shell stop loss triggered at 3235.7 I will accept close near to 18.9 point loss and be a buyer at this

point keeping the stop at 3235.7 and aim for the last target 3281 with some logical trailing stop loss.



This concept works in commodity, currency as well as in stocks.

However the limitation of this article is that it does not discuss all the trading rules and conditions which are being researched by me. In the gann master course the supplied software uses all the extended set of logics.

**Day trading using Gann Angle dynamic approach:** if we will make use of the volatility along with the gann angle then this concept will become dynamic and it will produce great result. All the above process that I have explained in

the earlier section will remain same only additional parameter daily volatility will be used with the gann angle. In this method, we will calculate the daily volatility based on the past 10 days last trade price of any instrument.

### **1. Daily volatility calculation:**

- a. Take past 10 days last trade price of any stock or index.
- b. Calculate the **absolute return** by using the natural logarithm function LN(). You will get 9 data points.

Formula:

Absolute return = LN (Current price/ Previous price)

- c. Calculate the square absolute return for all 9 data points.
- d. Calculate the average of absolute return and square absolute return.
- e. Calculate variance.

Formula:

Variance = square absolute return – (absolute return)<sup>2</sup>

- f. Calculate daily volatility percentage.

Formula: Daily Volatility percentage = square root of (variance) X 100.

From the daily volatility percentage, we understood in the coming day the stock or index whose daily volatility percentage was calculated as per the above process would fluctuate to the extent of daily volatility percentage.

I have taken the state bank of India 12 October to 25 October 2011 to predict the intraday level for next trading session using the gann angle and the volatility.

a. I have calculated the daily volatility as explained above for sbi.

Date	LTP-SBI	Absolute return	Square absolute return
12-Oct-11	1880	0	0
13-Oct-11	1875.35	-0.002476468	6.13289E-06
14-Oct-11	1883	0.004070941	1.65726E-05
17-Oct-11	1885.5	0.001326788	1.76037E-06
18-Oct-11	1885	-0.000265217	7.034E-08
19-Oct-11	1909.25	0.012782674	0.000163397
20-Oct-11	1933.9	0.012828195	0.000164563
21-Oct-11	1949	0.007777731	6.04931E-05
24-Oct-11	1911	-0.019689755	0.000387686
25-Oct-11	1842.25	-0.036639015	0.001342417
	Average	-0.002253792	0.000238121
	Variance	0.000233042	
Daily Volatility %		1.526570684	

Above calculation says the daily volatility is 1.5266%. Hence, the stock has the probability to fluctuate by 1.5266% in the coming day. Base on the above conclusion I will see a price fluctuation of 28.1233 (i.e.  $1842.25 \times 1.5266/100$ ) rupee in the sbi counter in future trading session.

Hence my expected high is  $1842.25 + 28.1233 = 1870.3732$   
my expected low is  $1842.25 - 28.1233 = 1814.1268$ .

Now in order to get the buy sell level in the gap up opening with uptrend I will use the 1842.25 as low and 1870.3732 as high in the gann angle tool and follow all its rules to derive the targets.

Using the above price points I observe that the **trading rule-d** is being violated, hence I have done the changes in

the data point to 1856.32 (i.e. midpoint of the above data points) and derive the following levels for the future trading session.

			Low		High		
			1856.32		1856.32		
	Degree	Degree Factor	Resistance			Degree Factor	support
16X1	86.25	0.479166667	1897.8394	1X16	86.25	0.479166667	1815.2598
8X1	82.5	0.458333333	1896.0247	1X8	82.5	0.458333333	1817.0355
4X1	75	0.416666667	1892.3978	1X4	75	0.416666667	1820.5894
3X1	71.25	0.395833333	1890.5857	1X3	71.25	0.395833333	1822.3677
2X1	63.75	0.354166667	1886.964	1X2	63.75	0.354166667	1825.9269
1X1	45	0.25	1877.925	1X1	45	0.25	1834.84
1X2	26.25	0.145833333	1868.9077	2X1	26.25	0.145833333	1843.7748
1X3	18.75	0.104166667	1865.3069	3X1	18.75	0.104166667	1847.3548
1X4	15	0.083333333	1863.5078	4X1	15	0.083333333	1849.1461
1X8	7.5	0.041666667	1859.9122	8X1	7.5	0.041666667	1852.7313
1X16	3.75	0.020833333	1858.1156	16X1	3.75	0.020833333	1854.5252

In the future trading session which follows the 25<sup>th</sup> october 2011 any gap up opening above 1849.14 and below 1863.50, if the price cross over 1863.50 then I will buy sbi for optimum target of 1898 and any gap up opening and price below 1849 I will sell for target 1815.25.

Similarly, to get the buy sell levels in the gap down opening and downtrend I will use the 1842.25 as high and 1814.1268 as low in gann angle tool and derive the targets.

Using the above price points I observe that the **trading rule-d** is being violated, hence I have done the changes in the data point to 1828.19 (i.e. midpoint of the above data points) and derive the following levels for the future trading session.

			Low		High		
			1828.19		1828.19		
	Degree	Degree Factor	Resistance			Degree Factor	support
16X1	86.25	0.479166667	1869.3954	1X16	86.25	0.479166667	1787.4438
8X1	82.5	0.458333333	1867.5943	1X8	82.5	0.458333333	1789.2058
4X1	75	0.416666667	1863.9947	1X4	75	0.416666667	1792.7325
3X1	71.25	0.395833333	1862.1962	1X3	71.25	0.395833333	1794.4971
2X1	63.75	0.354166667	1858.6019	1X2	63.75	0.354166667	1798.029
<b>1X1</b>	<b>45</b>	<b>0.25</b>	<b>1849.6312</b>	<b>1X1</b>	<b>45</b>	<b>0.25</b>	<b>1806.8738</b>
1X2	26.25	0.145833333	1840.6822	2X1	26.25	0.145833333	1815.7404
1X3	18.75	0.104166667	1837.1086	3X1	18.75	0.104166667	1819.2931
<b>1X4</b>	<b>15</b>	<b>0.083333333</b>	<b>1835.3232</b>	<b>4X1</b>	<b>15</b>	<b>0.083333333</b>	<b>1821.0707</b>
1X8	7.5	0.041666667	1831.7548	8X1	7.5	0.041666667	1824.6286
1X16	3.75	0.020833333	1829.972	16X1	3.75	0.020833333	1826.4089

In the future trading session which follows the 25<sup>th</sup> october 2011 any gap down opening above 1821.07 and below 1835.32, if the price cross over 1835.32 then I will buy sbi for optimum target of 1869.39 and any gap down opening and price below 1821.07 I will sell for target 1787.44.

If the price in future day may have a gap up **opening above 1863.5078 or below 1849.1461 or gap down opening below 1821.0707 or above 1835.3232** then the above calculation will not solve our requirement then we need to take the opening price of that day into account for calculation of volatility. We will use the opening price with projected high and opening price with projected low in

gann angle tool to derive the entry levels. Say SBI open at 1870 on the future trading day which follows the 25<sup>th</sup> october 2011 then in the volatility calculation replace the 1842.25 with 1870 and calculated the new volatility and expected high and low. The new data points will be as follows

Date	LTP-SBI	Absolute return	Square absolute return
12-Oct-11	1880	0	0
13-Oct-11	1875.35	-0.002476468	6.13289E-06
14-Oct-11	1883	0.004070941	1.65726E-05
17-Oct-11	1885.5	0.001326788	1.76037E-06
18-Oct-11	1885	-0.000265217	7.034E-08
19-Oct-11	1909.25	0.012782674	0.000163397
20-Oct-11	1933.9	0.012828195	0.000164563
21-Oct-11	1949	0.007777731	6.04931E-05
24-Oct-11	1911	-0.019689755	0.000387686
25-Oct-11	1870	-0.021688234	0.00047038
	Average	-0.000592594	0.000141228
	Variance	0.000140877	
Daily Volatility %		1.186916667	
Expected high		1892.195342	
Expected low		1847.804658	

New trading levels in uptrend will be as given below. Since the opening is gap up the uptrend, calculation will be followed for trade decision. In this case, the downtrend level calculation is not required.

			Low		High		
			1881.1		1881.1		
	Degree	Degree Factor	Resistance			Degree Factor	support
16X1	86.25	0.479166667	1922.8941	1X16	86.25	0.479166667	1839.7651
8X1	82.5	0.458333333	1921.0674	1X8	82.5	0.458333333	1841.5527
4X1	75	0.416666667	1917.4167	1X4	75	0.416666667	1845.1306
3X1	71.25	0.395833333	1915.5926	1X3	71.25	0.395833333	1846.9208
2X1	63.75	0.354166667	1911.947	1X2	63.75	0.354166667	1850.5038
1X1	45	0.25	1902.8483	1X1	45	0.25	1859.4767
1X2	26.25	0.145833333	1893.7713	2X1	26.25	0.145833333	1868.4712
1X3	18.75	0.104166667	1890.1466	3X1	18.75	0.104166667	1872.0751

1X4	15	0.083333333	1888.3356	4X1	15	0.083333333	1873.8783
1X8	7.5	0.041666667	1884.716	8X1	7.5	0.041666667	1877.4874
1X16	3.75	0.020833333	1882.9076	16X1	3.75	0.020833333	1879.2933

**Trend termination point:** Gann angle also helps us in identifying the trend and the trend termination. 1 X 4 or the 4 X 1 angle price point cross over is known as the preliminary trend confirmation points for uptrend or downtrend. However, the 1 X 1 angle price resistance crossover signals the strong up trend break out and the 1 X 1 angle price support break considered as strong down trend break out. In gann angle concept we assume all the trend action will terminate at 1 X 16 or 16 X 1 angle price point.

**Dynamic gann square of nine principles:** Using the volatility we can make any gann method dynamic. In gann square of nine principle, we need to derive the uptrend price points in the wheel by adding the step to the lowest number and each higher number in the wheel will be its preceding number added with the step. Similarly the downtrend price points will be calculated by subtracting the step from the highest number. Step is nothing but the high to low price difference divided by 81 for square of nine wheel. While using the gann square of nine for deriving the short-term investment decision I found the principle yields good result. However when applying the same concept in the intraday trade I did not get the desired result which I was expecting from the method. This is the reason why I have thought of to introduce the volatility in this method.

Now the key question is how the volatility will find a place in this method. As I have explained before the daily volatility, percentage is the expected price fluctuation. Hence, now we will take the expected price fluctuation to derive the steps. Consider the same example of SBI given in page 105. The daily volatility percentage is 1.5266, expected price range is Rs 28.12, and the last trade price is 1842.25.

Step will be  $28.12/81=0.347160$

Seed number will be  $1842.25+0.347160$  this will be the 1<sup>st</sup> number in the square of nine wheel. Second number will be 1<sup>st</sup> number added with 0.347160 .Likewise the 81<sup>st</sup> number will be 80<sup>th</sup> number added with the 0.347160 and this must be equal to  $1842.25+28.12=1870.3732$

**Gann Square Of Nine Wheel**

Enter 1st Price       Enter 2nd Price

 

1862.04	1862.388	1862.735	1863.082	1863.429	1863.776	1864.124	1864.471	1864.818
1861.693	1853.013	1853.36	1853.708	1854.055	1854.402	1854.749	1855.096	1865.165
1861.346	1852.666	1846.764	1847.111	1847.458	1847.805	1848.152	1855.444	1865.512
1860.999	1852.319	1846.416	1843.292	1843.639	1843.986	1848.5	1855.791	1865.86
1860.652	1851.972	1846.069	1842.944	1842.597	1844.333	1848.847	1856.138	1866.207
1860.304	1851.624	1845.722	1845.375	1845.028	1844.68	1849.194	1856.485	1866.554
1859.957	1851.277	1850.93	1850.583	1850.236	1849.888	1849.541	1856.832	1866.901
1859.61	1859.263	1858.916	1858.568	1858.221	1857.874	1857.527	1857.18	1867.248
1870.373	1870.026	1869.679	1869.332	1868.984	1868.637	1868.29	1867.943	1867.596

**Dynamic gann square of twelve principles:** The way i have done the square of nine dynamic in the same way I

will make the square of 12 dynamic. I will use the daily volatility percentage to find the price range for the day followed with I will calculate the steps by dividing the price range with 144. The seed number in the uptrend will be the last trade price added with the step and the 144<sup>th</sup> number will be 143<sup>rd</sup> number added with the step. However do remember the square of 12 wheel is a different from the square of nine wheel in many aspects the arrangement of numbers are also different. The downtrend price points will be calculated by the way of subtracting the step from the last trade price.

While using Dynamic Square of nine or dynamic square of twelve wheels keep a close eye on the annual volatility percentage. Annual volatility is nothing but the daily volatility multiplied with square root of 365. If the annual volatility is above 40% use the square of twelve wheel else use the dynamic square of 9 for making the intraday trade decision.

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