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<b>Introduction</b>	<b>Page 1</b>
<b>Analysis Briefing</b>	<b>Page 2</b>
<b>Base Analysis</b>	<b>Page 3 – 16</b>
• <b>Pricing Structure</b>	
• <b>Trend Pattern</b>	
• <b>Pattern</b>	
• <b>Intraday High and Low (Timing)</b>	
• <b>Wave Correction</b>	
<b>Co-Integration Analysis</b>	<b>Page 17 - 21</b>
<b>Complex Co-Integration Analysis</b>	<b>Page 22 – 26</b>

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**Introduction**

To trade in the market (FOREX, FUTURES and STOCKS) is simple and easy as long as trader acquires proper of knowledge and analysis. However, most of the traders fail to achieve his/her goal because it is not the high probability winning strategy. Apparently the achievement is not consistent for those traders even trader discipline their trading objective. In fact, they only trade better during sometimes and perform badly during another period of time.

In order to achieve oneself trading objective, trader should conducts market analysis before putting real cash into games. Why should we require an analysis? Does it help in trading? Yes, it does because trader should fully understand the market patterns/behaviors before setup a strategy, which according to high probability analysis reports.

This analysis is regarding price behavior/pattern by using historical price. Can we apply the analysis result into future trading since it was past? Yes, we can because “historical price tends to repeat itself” or some types of patterns repeat most of the time. In fact, Trending and ranging are the patterns that repeat over and over again in all price action charts. And I think every trader should aware of these patterns. Both patterns are formed because market price tends to shift from one area to another equilibrium area due to its imbalance demand and supply.

In order to conduct analysis for one market, I created analysis software by using VBA coding. The idea is nobody is willing to pay any costs for available trading software. Meanwhile, the analysis system could perform Statistical Analysis for Pricing Structure (Range and Pricing Probability), Trend Behavior (Pattern Probability), Pattern (Fibonacci Retracement/Extension Probability), Intraday High & Low (Time Probability), and Wave Correction (Range/Fibonacci and timing probability). Therefore, I am going to demonstrate my analysis here with the crucial evidences of how market moves and behave.

This analysis is only for illustration and guidance and any formula of calculation are not provided.

## Analysis Briefing

Instrument : FOREX  
 Product : EURUSD  
 Historical Data : Jan 2004 to Dec 2011 (8 Years)  
 Timing : GMT 00:00:00 to 23:59:59  
 Level of Analysis : Base, Co-integration and complex Co-integration  
 Time Frame chart : Multiple time frame charts  
 Spread : Historical price for analysis is mid price between bid and offer

## Base Analysis

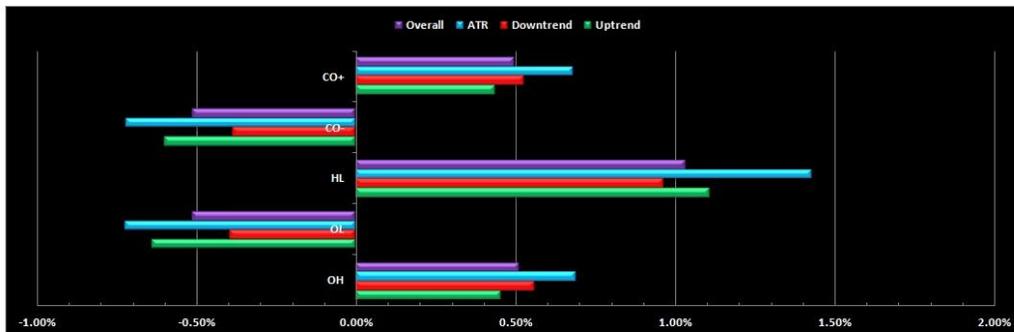
Type : Pricing Structure  
 Time Frame Chart : Daily  
 Trend Analyst : Uptrend, Downtrend, ATR and Overall  
 Trend Filtering : Moving Average SMA-24 Period  
 Volatile Filtering : ATR-14 > 0.015  
 Total Candlestick Bars : 2083  
 Descriptions : About candlestick bars OH, OL, CO+ & CO- range for respective trend and volatility  
 : OH = Open to High  
 : OL = Open to Low  
 : CO+ = Open to Close Upside  
 : CO- = Open to Close Downside  
 Purpose : Provide probability of pricing structure for respective trend and volatility

### Status of Analysis

Duration from	1/1/2004	to	12/30/2011
Calculation	EXECUTED		

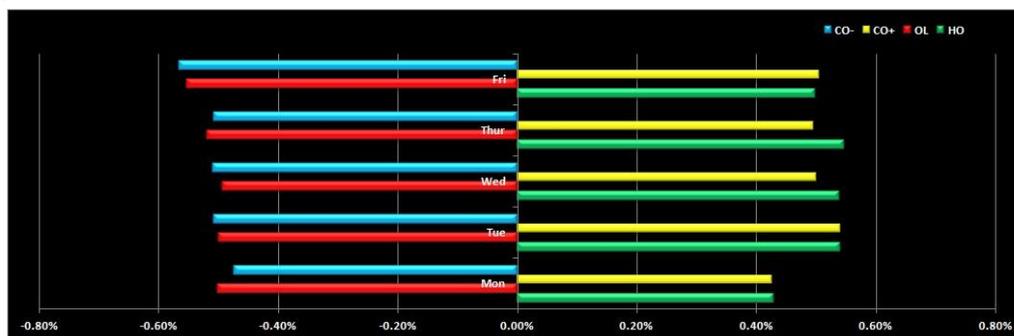
### Status for Total of Candlestick Bars

All	OH	OL	CO+	CO-	O=C
2083	2083	2083	1062	1035	14



### Overall Summary (Mean)

	OH	OL	HL	CO-	CO+
Uptrend	0.46%	-0.64%	1.11%	-0.60%	0.44%
Downtrend	0.56%	-0.40%	0.96%	-0.39%	0.53%
ATR	0.69%	-0.72%	1.43%	-0.72%	0.68%
Overall	0.51%	-0.51%	1.03%	-0.51%	0.50%

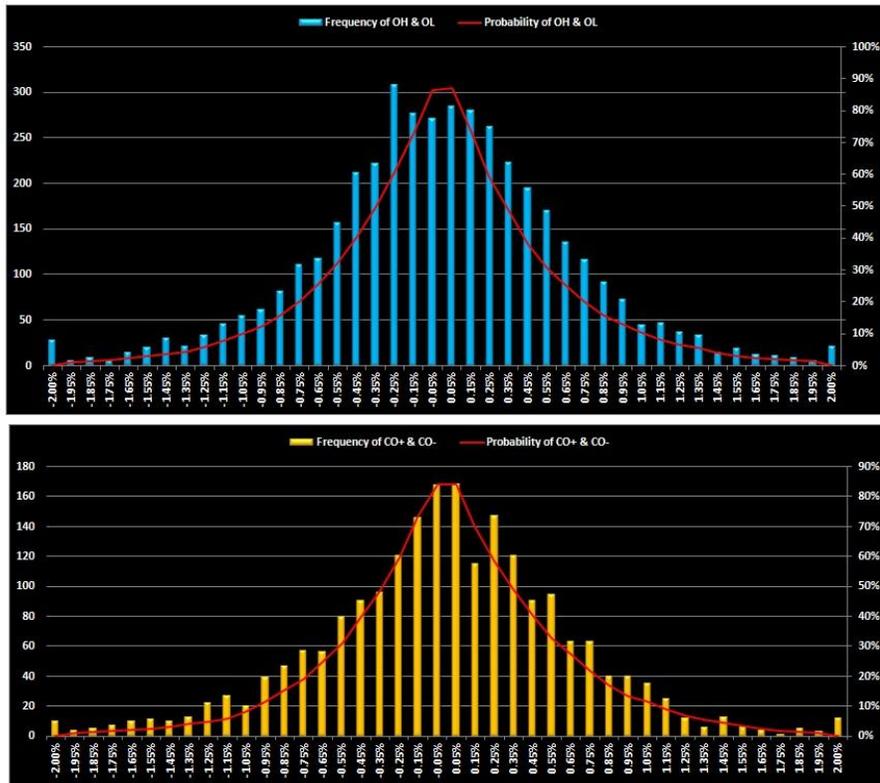


### Overall Summary (Mean) in Period

	HO	OL	CO+	CO-
Mon	0.43%	-0.50%	0.43%	-0.47%
Tue	0.54%	-0.50%	0.54%	-0.51%
Wed	0.54%	-0.49%	0.50%	-0.51%
Thur	0.55%	-0.52%	0.50%	-0.51%
Fri	0.50%	-0.55%	0.51%	-0.57%

Screenshot 1.1: Overall Summary (Mean)

The top table and chart illustrate mean of respective candlestick bars for uptrend, downtrend, volatility and overall  
 The bottom table and chart illustrate mean of respective candlestick bars from Monday to Friday for overall



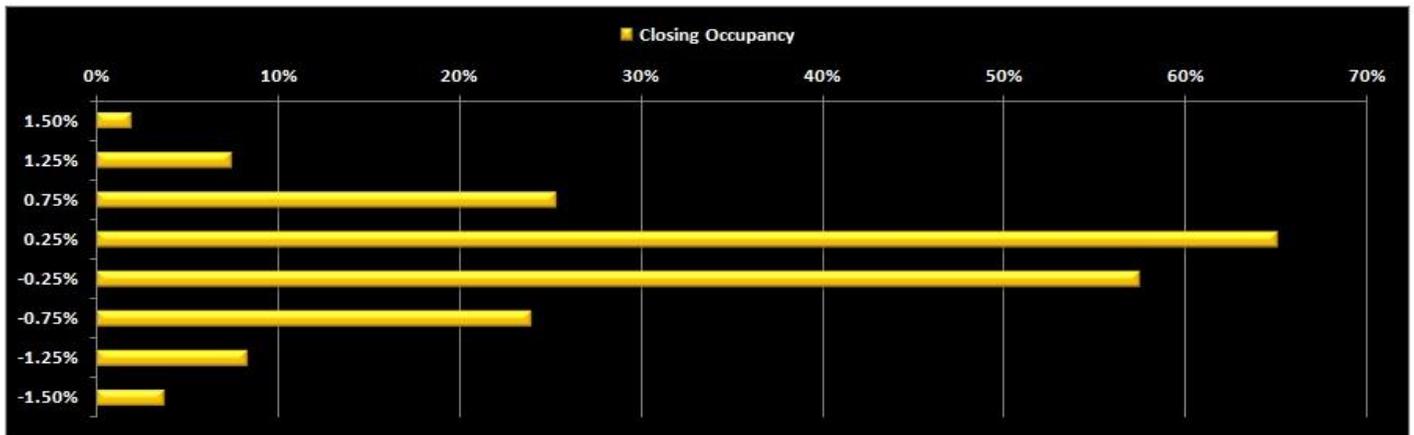
Frequency & Probability

	Range %	Mean	Frequency	Probability %
OH/CO+	2.00%	2.00%	21	12
	1.90%	2.00%	6	3
	1.80%	1.90%	9	5
	1.70%	1.80%	11	1
	1.60%	1.70%	12	4
	1.50%	1.60%	19	6
	1.40%	1.50%	14	13
	1.30%	1.40%	33	6
	1.20%	1.30%	37	12
	1.10%	1.20%	47	25
	1.00%	1.10%	45	35
	0.90%	1.00%	73	40
	0.80%	0.90%	92	40
	0.70%	0.80%	116	63
	0.60%	0.70%	135	63
	0.50%	0.60%	170	94
	0.40%	0.50%	195	90
	0.30%	0.40%	223	120
	0.20%	0.30%	262	147
	0.10%	0.20%	279	115
0.00%	0.10%	284	168	
0.00%	-0.10%	271	167	
-0.10%	-0.20%	276	145	
-0.20%	-0.30%	307	120	
-0.30%	-0.40%	221	96	
-0.40%	-0.50%	211	90	
-0.50%	-0.60%	157	79	
-0.60%	-0.70%	117	56	
-0.70%	-0.80%	111	57	
-0.80%	-0.90%	82	47	
-0.90%	-1.00%	61	39	
-1.00%	-1.10%	55	20	
-1.10%	-1.20%	46	27	
-1.20%	-1.30%	34	22	
-1.30%	-1.40%	21	13	
-1.40%	-1.50%	30	10	
-1.50%	-1.60%	20	11	
-1.60%	-1.70%	14	10	
-1.70%	-1.80%	6	7	
-1.80%	-1.90%	9	5	
-1.90%	-2.00%	6	4	
-2.00%	-2.00%	28	10	

Screenshot 1.3: Frequency and Probability (Overall)

The first column of frequency and probability is OH follow by CO+ at top section of table

The first column of frequency and probability is OL follow by CO- at bottom section of table



Closing Occupancy

	Range %	Mean	CO-				CO+				Sum
			<=	-1.50%	-1.00%	-0.50%	0.50%	1.00%	1.50%	>=	
OH	1.50%	1.50%	0%	0%	0%	0%	0%	0%	1%	0%	2%
	1.00%	1.50%	0%	0%	0%	0%	1%	4%	2%	-	8%
	0.50%	1.00%	0%	0%	1%	4%	12%	8%	-	-	25%
	0.00%	0.50%	0.25%	2%	4%	10%	22%	27%	-	-	65%
OL	0.00%	-0.50%	-	-	-	16%	25%	12%	4%	0%	57%
	-0.50%	-1.00%	-	-	8%	11%	4%	1%	0%	0%	24%
	-1.00%	-1.50%	-	3%	4%	1%	0%	0%	0%	0%	8%
	-1.50%	-1.50%	2%	1%	0%	0%	0%	0%	0%	0%	4%

Screenshot 1.4: Closing Occupancy (Overall)

This table and chart illustrate the closing position % if low or high of candlestick bar act at respective range %

**Explanation:**

Screenshot 1.1 to 1.4 is the overall (Uptrend + downtrend + volatility) analysis from 1/1/2004 to 31/12/2011.

From screenshot 1.1 to 1.3, a candlestick bar is always formed (OH and OL) during all the period 2083 days. Please refer to screenshot 1.1 – Status for total of candlesticks bars for information.

Therefore, entry and target could likely be applied at above or below open based on the probability

Long = Entry and target above open price

Short = Entry and target below open price

From screenshot 1.4, most of the closing price close between range -0.50% and +0.50%

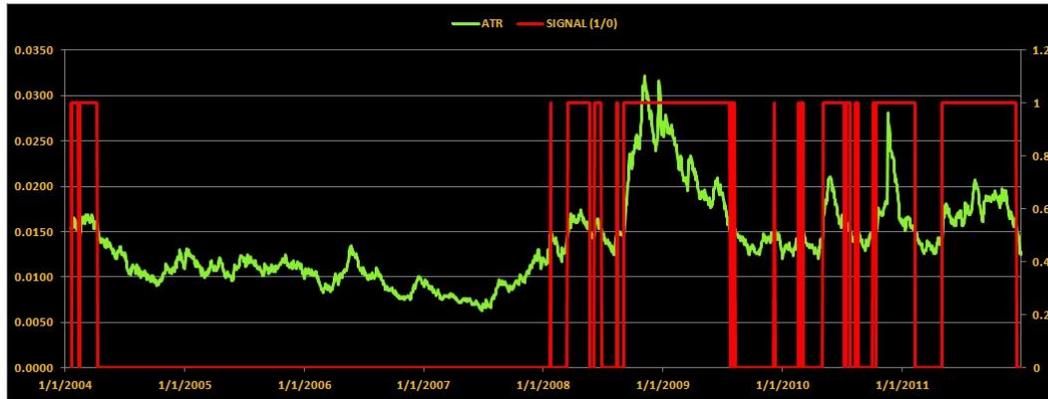
Total 65% of price closes below open if OH/high between 0.00 and +0.50%

Total 57% of price closes above open if OL/low between 0.00 and -0.50%

In order to capture more earning outcome in the end of trading, entry could be applied at

Long Position = -0.50%

Short Position = +0.50%



**Explanation**  
Signal (1/0): 1 = Volatile and 0 = Non-volatile  
Only ATR > 0.01 = Volatile

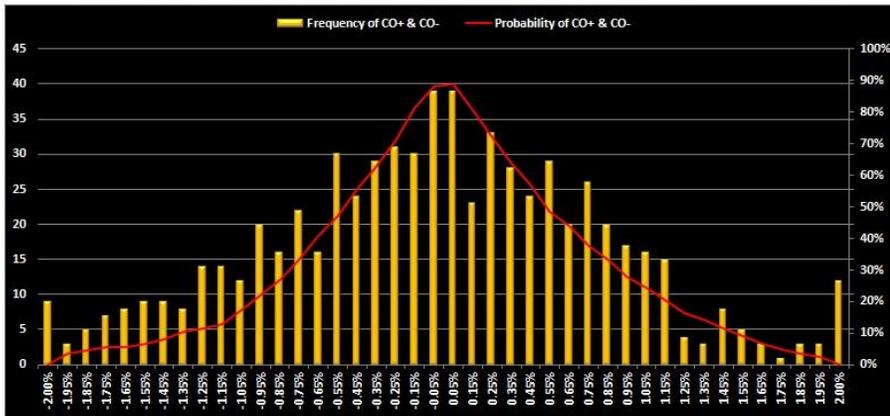
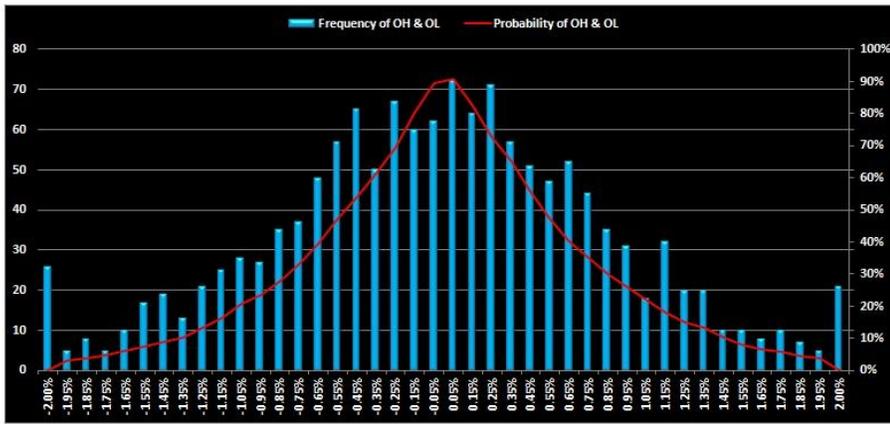


Screenshot 1.5: Volatility in ATR-14

ATR > 0.015 = Volatility

Volatile = Red line at value 1

Non-Volatile = Red line at value 0



Frequency & Probability

	Range %	Mean	Frequency	Probability %
OH/CO+	2.00%	2.00%	21	12%
	1.90%	1.95%	5	3%
	1.80%	1.85%	7	4%
	1.70%	1.75%	10	5%
	1.60%	1.65%	8	6%
	1.50%	1.55%	10	7%
	1.40%	1.45%	10	8%
	1.30%	1.35%	20	10%
	1.20%	1.25%	20	13%
	1.10%	1.15%	32	16%
	1.00%	1.05%	18	21%
	0.90%	0.95%	31	24%
	0.80%	0.85%	35	28%
	0.70%	0.75%	44	33%
OL/CO-	0.60%	0.65%	52	40%
	0.50%	0.55%	47	47%
	0.40%	0.45%	51	54%
	0.30%	0.35%	57	63%
	0.20%	0.25%	71	71%
	0.10%	0.15%	64	81%
	0.00%	0.05%	72	88%
	0.00%	-0.05%	62	89%
	-0.10%	-0.15%	60	82%
	-0.20%	-0.25%	67	72%
	-0.30%	-0.35%	50	65%
	-0.40%	-0.45%	65	57%
	-0.50%	-0.55%	57	48%
	-0.60%	-0.65%	48	44%
-0.70%	-0.75%	37	38%	
-0.80%	-0.85%	35	33%	
-0.90%	-0.95%	27	28%	
-1.00%	-1.05%	28	24%	
-1.10%	-1.15%	25	20%	
-1.20%	-1.25%	21	16%	
-1.30%	-1.35%	13	14%	
-1.40%	-1.45%	19	12%	
-1.50%	-1.55%	17	9%	
-1.60%	-1.65%	10	7%	
-1.70%	-1.75%	5	5%	
-1.80%	-1.85%	8	3%	
-1.90%	-1.95%	5	3%	
-2.00%	-2.00%	26	0%	

Screenshot 1.6: Frequency and Probability (ATR)

The first column of frequency and probability is OH follow by CO+ at top section of table

The first column of frequency and probability is OL follow by CO- at bottom section of table



Closing Occupancy

	Range %	Mean	CO-				CO+				Sum
			<=	-1.50%	-1.00%	-0.50%	0.50%	1.00%	1.50%	>=	
OH	1.50%	1.50%	0%	0%	0%	0%	0%	2%	0%	0%	2%
	1.00%	1.50%	0%	0%	0%	0%	2%	12%	0%	-	15%
	0.50%	1.00%	0%	1%	0%	0%	21%	10%	-	-	33%
	0.00%	0.50%	0.25%	9%	10%	0%	0%	31%	-	-	50%
OL	0.00%	-0.50%	-	-	-	0%	20%	0%	0%	0%	40%
	-0.50%	-1.00%	-	-	0%	0%	10%	3%	0%	0%	13%
	-1.00%	-1.50%	-	7%	0%	0%	1%	0%	0%	0%	8%
	-1.50%	-1.50%	9%	5%	0%	0%	0%	0%	0%	0%	14%

Screenshot 1.7: Closing Occupancy (ATR)

This table and chart illustrate the closing position with respective range % of candlestick bar(Low and high)

**Explanation:**

Screenshot 1.5 to 1.7 illustrates the analysis of volatility by using ATR indicator. Apparently, the outcome is slightly different if compare with overall analysis result. When ATR is increasing, price behaves like trending (Price move far away from open). However, overall of the closing price still maintain between the range -0.50% and +0.50% in the end of closing.

In fact, entry/stop/target parameter should be adjusted to suit the prevailing volatile market pattern. As illustrated by screenshot 1.1, the mean for OH, OL, CO+ and CO- is obviously higher than the overall scenarios.

**\*Information:**

*All the above analysis does not contain the analysis of uptrend and downtrend because the outcome is similar to the overall analysis outcome.*

Type : Trend Behavior  
 Time Frame Chart : Daily  
 Trend Analyst : Trending, Ranging, Breakout & Expand  
 Total Candlesticks Bars : 2083  
 Descriptions : About trend movement from past to current period  
 : Trending = Current price breakout with either previous support or resistance  
 : Ranging = Current price stay between previous support and resistance  
 : Breakout = Trending + Expand  
 : Expand = Current price breakout with both the previous support and resistance  
 Purpose : Provide occupancy % of market trend for certain period of time



Screenshot 2.1: Trending pattern



Screenshot 2.2: Ranging pattern



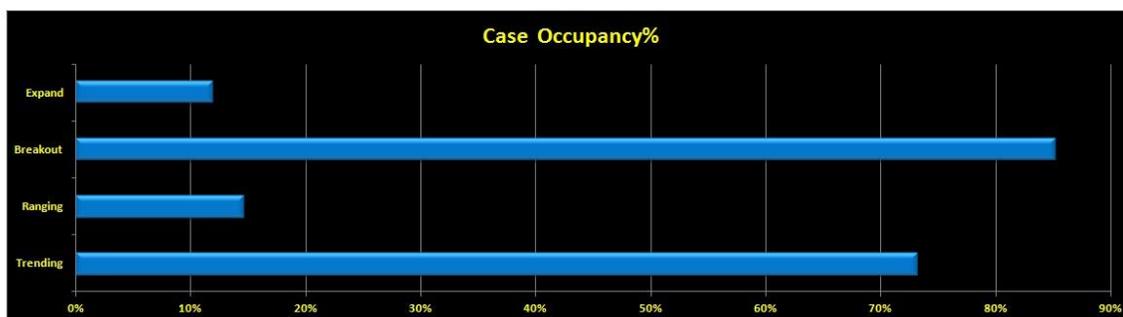
Screenshot 2.3: Expand pattern

**Explanation:**

Screenshots 2.1 to 2.3 illustrate pattern/behavior from price action chart. The bold green line acts as support line and bold red line acts as resistance line.

**Status of Analysis**

Duration from	1/1/2004	to	12/30/2011
Calculation	EXECUTED		



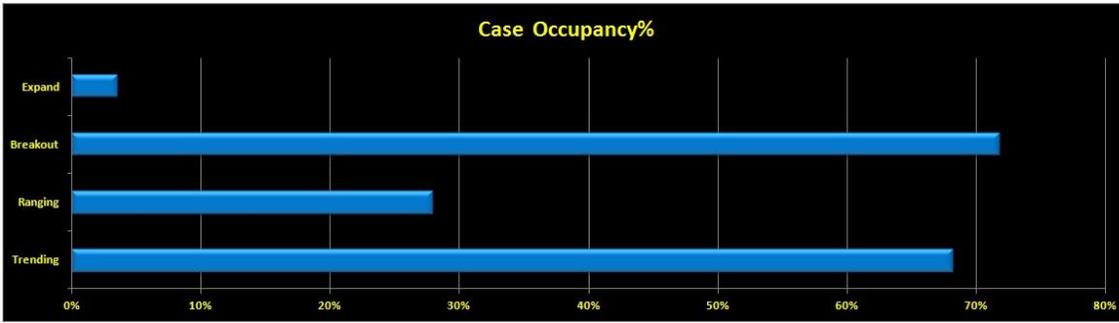
**Overall Summary**

Data	Total	%
Trending	1526	73%
Ranging	306	15%
Breakout	1776	85%
Expand	250	12%

Screenshot 2.4: Case Occupancy % for Yesterday to Current day comparison

Status of Analysis

Duration from 1/1/2004 to 12/30/2011  
Calculation EXECUTED



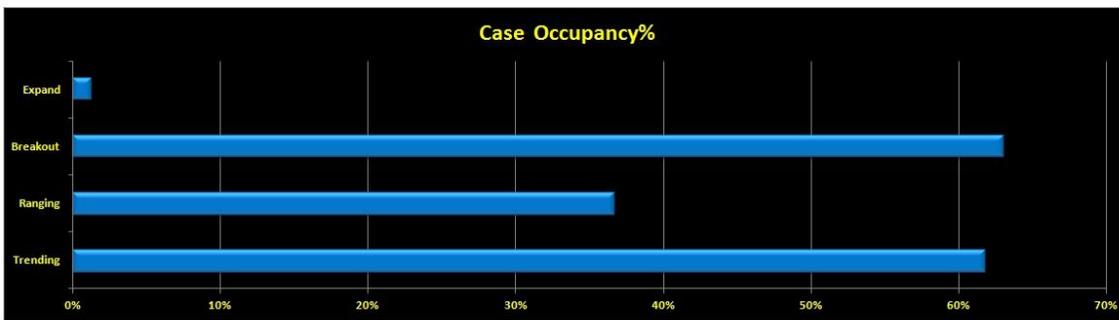
Overall Summary

	Total	%
Data	2083	-
Trending	1423	68%
Ranging	583	28%
Breakout	1498	72%
Expand	75	4%

Screenshot 2.5: Case Occupancy % for 2 days ago to Current day comparison

Status of Analysis

Duration from 1/1/2004 to 12/30/2011  
Calculation EXECUTED



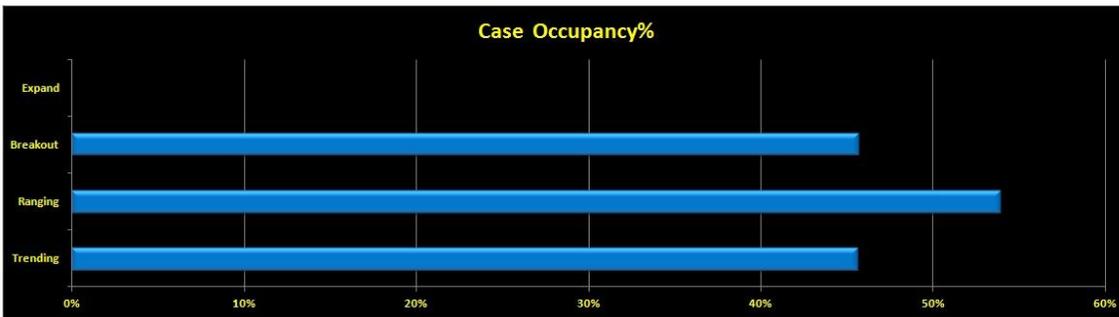
Overall Summary

	Total	%
Data	2083	-
Trending	1288	62%
Ranging	765	37%
Breakout	1315	63%
Expand	27	1%

Screenshot 2.6: Case Occupancy % for 3 days ago to Current day comparison

Status of Analysis

Duration from 1/1/2004 to 12/30/2011  
Calculation EXECUTED



Overall Summary

	Total	%
Data	2083	-
Trending	952	46%
Ranging	1124	54%
Breakout	953	46%
Expand	1	0%

Screenshot 2.7: Case Occupancy % for 6 days ago to Current day comparison

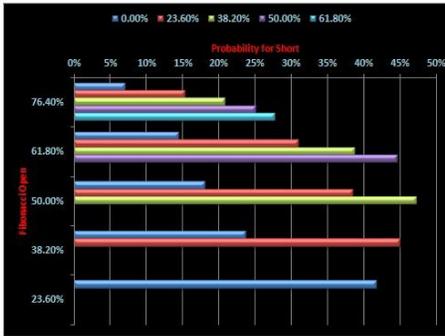
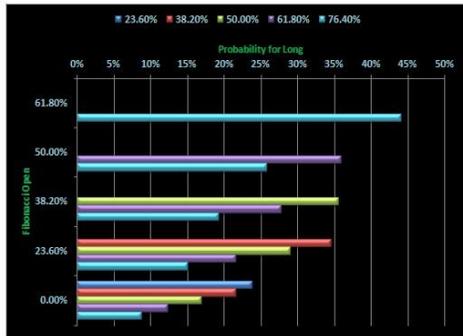
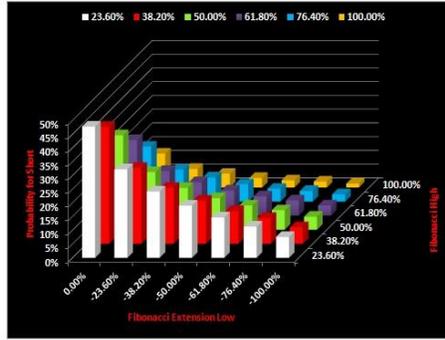
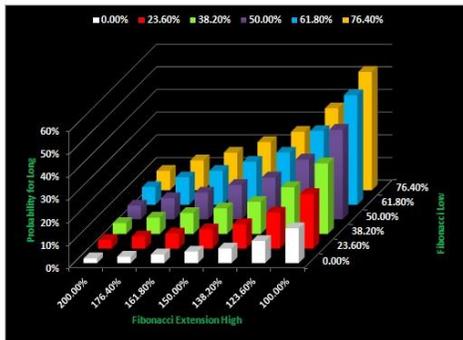
Explanation:

Screenshot 2.4 to 2.7 is the analysis from 1/1/2004 to 31/12/2011.

From the screenshot 2.4 to 2.7, trending pattern happens frequently for yesterday to current day comparison. However, ranging dominates trending if more past days is applied.

Therefore, a strategy with trending or breakout should be applied for daily trading.

Type : Pattern  
 Time Frame Chart : Daily  
 Trend Analyst : Trending and Ranging  
 Total Candlestick Bars : 2083  
 Descriptions : About Fibonacci % for both trend behaviors. Fibonacci % is measured between  
 : Support line = Fibonacci 0.00%  
 : Resistance line = Fibonacci 100.00%  
 Purpose : Provide probability of trend movement with trending and ranging pattern



**Trending Behaviour**

		Probability for Long (Low Position)						
		Fibo %	0.00%	23.60%	38.20%	50.00%	61.80%	76.40%
Ext H	200.00%	2%	4%	5%	6%	8%	9%	
	176.40%	3%	5%	7%	9%	12%	13%	
	151.80%	4%	7%	9%	12%	15%	17%	
	150.00%	5%	8%	11%	15%	18%	21%	
	138.20%	6%	11%	14%	18%	23%	26%	
	123.60%	10%	16%	21%	26%	33%	36%	
	100.00%	15%	24%	31%	40%	48%	52%	

		Probability for Short (High Position)						
		Fibo %	23.60%	38.20%	50.00%	61.80%	76.40%	100.00%
Ext L	0.00%	48%	43%	34%	28%	20%	12%	
	-23.60%	32%	28%	21%	16%	12%	7%	
	-38.20%	24%	20%	15%	12%	9%	5%	
	-50.00%	19%	16%	12%	9%	6%	4%	
	-61.80%	15%	12%	9%	7%	5%	3%	
	-76.40%	11%	9%	7%	6%	4%	2%	
	-100.00%	8%	6%	5%	4%	3%	1%	

**Ranging Behaviour**

		Probability for Long (High Position)							
		Range %	0.00%	23.60%	38.20%	50.00%	61.80%	76.40%	100.00%
Open Position	76.40%	-	-	-	-	-	-	-	-
	61.80%	-	-	-	-	-	44%	-	-
	50.00%	-	-	-	-	36%	26%	-	-
	38.20%	-	-	-	36%	28%	19%	-	-
	23.60%	-	-	35%	29%	22%	15%	-	-
	0.00%	-	24%	22%	17%	12%	9%	-	-

		Probability for Short (Low Position)							
		Range %	0.00%	23.60%	38.20%	50.00%	61.80%	76.40%	100.00%
Open Position	76.40%	7%	15%	21%	25%	28%	-	-	-
	61.80%	15%	31%	39%	45%	-	-	-	-
	50.00%	18%	39%	47%	-	-	-	-	-
	38.20%	24%	45%	-	-	-	-	-	-
	23.60%	42%	-	-	-	-	-	-	-
	0.00%	-	-	-	-	-	-	-	-

Screenshot 3.1: Trending and Ranging Pattern Probability  
 This chart and table illustrate the trend probability by Fibonacci %

**Explanation:**

Screenshot 3.1 is the analysis from 1/1/2004 to 31/12/2011.

**Trending Pattern**

Total 52% = If lowest price is between 76.4% and 100.0% and highest price breaks resistance line and stays between 100% and 123.6%, then long entry at 76.4% and target at 100.0% could be applied. Please refer to table Ext H.

Total 45% = If highest price is between 0.0% and 23.6% and lowest price breaks support line and stays between 0.0% and -23.6%, then short entry at 23.6% and target at 0.0% could be applied. Please refer to table Ext L.

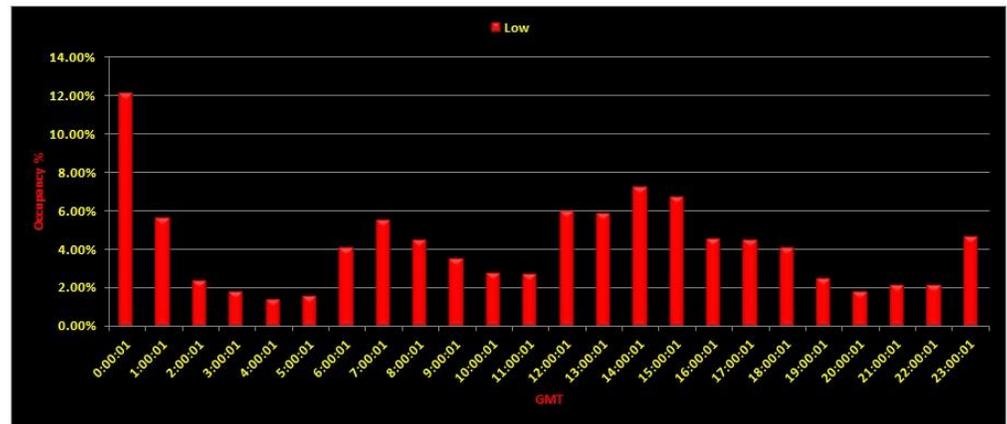
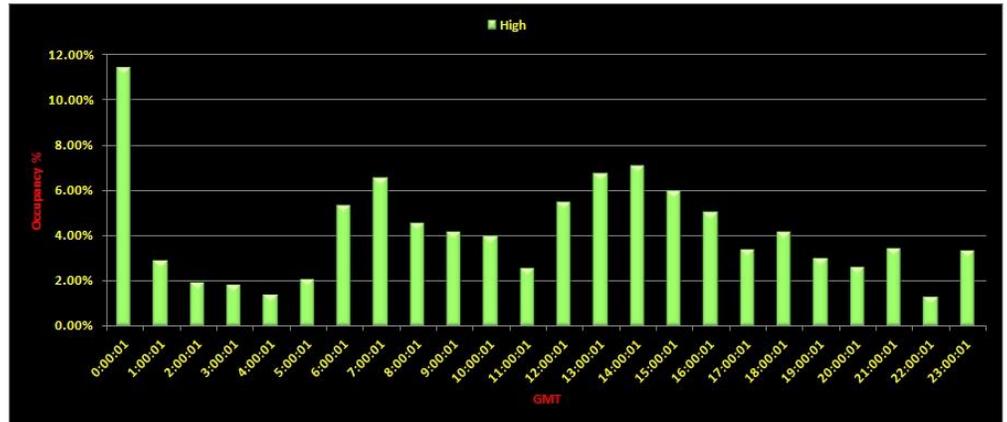
**Ranging Pattern**

Total 44% = If open price is between 61.8 and 76.4% and highest price is between 76.4% and 100%, then long entry at 61.8% and target at 76.4% could be applied.

Total 47% = If open price is between 50.0% and 61.8% and lowest price is between 38.2% and 50.0%, then short entry at 50.0% and target at 38.2% could be applied.

Type : Intraday High & Low (Timing)  
 Time Frame Chart : Hourly  
 Analyst Period : Daily  
 Total Candlestick Bars : 2083 (Daily)  
 Descriptions : About the timing of trend correction for OH/High and OL/Low  
 : OH/High = Open to High  
 : OL/Low = Open to Low  
 : Timing = GMT  
 Purpose : Provide opportunity for open position at right time

GMT	Frequency		Occupancy %	
	High	Low	High	Low
0:00:01	238	252	11.43%	12.10%
1:00:01	60	117	2.88%	5.62%
2:00:01	40	49	1.92%	2.35%
3:00:01	38	37	1.82%	1.78%
4:00:01	29	29	1.39%	1.39%
5:00:01	43	32	2.06%	1.54%
6:00:01	111	85	5.33%	4.08%
7:00:01	136	115	6.53%	5.52%
8:00:01	95	94	4.56%	4.51%
9:00:01	87	73	4.18%	3.50%
10:00:01	83	58	3.98%	2.78%
11:00:01	53	56	2.54%	2.69%
12:00:01	114	124	5.47%	5.95%
13:00:01	140	122	6.72%	5.86%
14:00:01	147	151	7.06%	7.25%
15:00:01	124	140	5.95%	6.72%
16:00:01	105	95	5.04%	4.56%
17:00:01	70	93	3.36%	4.46%
18:00:01	87	85	4.18%	4.08%
19:00:01	62	52	2.98%	2.50%
20:00:01	54	37	2.59%	1.78%
21:00:01	71	45	3.41%	2.16%
22:00:01	27	45	1.30%	2.16%
23:00:01	69	97	3.31%	4.66%
Sum	2083	2083		



Screenshot 4.1: Timing for Intraday High and Low

**Explanation:**

Screenshot 4.1 is the analysis from 1/1/2004 to 31/12/2011.

Recommend long entry position at GMT 4:00:01 or GMT 22:00:01. Most of the high price is formed at the time that except this both timing. Therefore, intraday trend is likely to move further upward direction after trend has passed the both timing.

Similarly, short entry position from GMT 2:00:01 to GMT 5:00:01. Most of the low price is formed at the time that except this both timing. Therefore, intraday trend is likely to move further downward direction after trend has passed the both timing.

Type : Wave Correction  
 Time Frame Chart : Hourly  
 Total Candlestick Bars : 2083 (Daily)  
 Descriptions : About 2<sup>nd</sup> wave retracement/correction by using distant, Fibonacci % and timing  
 : Distant = Pips  
 : Fibonacci = %  
 : Timing = GMT  
 Purpose : Provide probability of distant, Fibonacci % and timing for wave 2



Screenshot 5.1: Price Action Chart  
 This chart illustrates intraday wave pattern from 1/6/2012 to 7/6/2012  
 Pattern Top = Wave pattern at top  
 Pattern Bottom = Wave pattern at bottom

Pattern	Date	Loc Pt 2	Pt 1	Pt 2	Range	Time	Pt 1	Pt 2	Pt 3	Bars W1	Bars W2	Wave 1	Wave 2	W2 Fibo %	Pt 2 Time	MA
TOP	4/17/2012	1846	1.3115	1.3140	0.0025	14:00:01	1.3147	1.3115	1.3140	5	1	0.0032	0.0025	78%	14:00:01	
BOTTOM	4/18/2012	1868	1.3140	1.3067	0.0073	12:00:01	1.3115	1.3140	1.3067	1	22	0.0025	0.0073	294%	12:00:01	
TOP	4/20/2012	1924	1.3067	1.3220	0.0152	20:00:01	1.3140	1.3067	1.3220	22	56	0.0073	0.0152	209%	20:00:01	
BOTTOM	4/23/2012	1942	1.3220	1.3124	0.0095	14:00:01	1.3067	1.3220	1.3124	56	18	0.0152	0.0095	63%	14:00:01	
TOP	4/26/2012	2007	1.3124	1.3257	0.0133	7:00:01	1.3220	1.3124	1.3257	18	65	0.0095	0.0133	139%	7:00:01	
BOTTOM	4/27/2012	2030	1.3257	1.3173	0.0084	6:00:01	1.3124	1.3257	1.3173	65	23	0.0133	0.0084	63%	6:00:01	
TOP	4/27/2012	2038	1.3173	1.3260	0.0087	14:00:01	1.3257	1.3173	1.3260	23	8	0.0084	0.0087	103%	14:00:01	
BOTTOM	4/30/2012	2058	1.3260	1.3219	0.0042	10:00:01	1.3173	1.3260	1.3219	8	20	0.0087	0.0042	48%	10:00:01	
TOP	5/1/2012	2085	1.3219	1.3277	0.0058	13:00:01	1.3260	1.3219	1.3277	20	27	0.0042	0.0058	139%	13:00:01	
BOTTOM	5/6/2012	2167	1.3277	1.2961	0.0315	23:00:01	1.3219	1.3277	1.2961	27	82	0.0058	0.0315	546%	23:00:01	
TOP	5/7/2012	2184	1.2961	1.3061	0.0099	16:00:01	1.3277	1.2961	1.3061	82	17	0.0315	0.0099	32%	16:00:01	
BOTTOM	5/9/2012	2236	1.3061	1.2929	0.0132	20:00:01	1.2961	1.3061	1.2929	17	52	0.0099	0.0132	133%	20:00:01	
TOP	5/10/2012	2253	1.2929	1.2970	0.0041	13:00:01	1.3061	1.2929	1.2970	52	17	0.0132	0.0041	31%	13:00:01	
BOTTOM	5/11/2012	2265	1.2970	1.2915	0.0055	1:00:01	1.2929	1.2970	1.2915	17	12	0.0041	0.0055	133%	1:00:01	
TOP	5/11/2012	2275	1.2915	1.2946	0.0030	11:00:01	1.2970	1.2915	1.2946	12	10	0.0055	0.0030	56%	11:00:01	
BOTTOM	5/14/2012	2308	1.2946	1.2823	0.0122	20:00:01	1.2915	1.2946	1.2823	10	33	0.0030	0.0122	401%	20:00:01	
TOP	5/15/2012	2319	1.2823	1.2866	0.0042	7:00:01	1.2946	1.2823	1.2866	33	11	0.0122	0.0042	35%	7:00:01	
BOTTOM	5/16/2012	2342	1.2866	1.2695	0.0170	6:00:01	1.2823	1.2866	1.2695	11	23	0.0042	0.0170	403%	6:00:01	
TOP	5/16/2012	2349	1.2695	1.2747	0.0052	13:00:01	1.2866	1.2695	1.2747	23	7	0.0170	0.0052	30%	13:00:01	
BOTTOM	5/16/2012	2355	1.2747	1.2709	0.0038	19:00:01	1.2695	1.2747	1.2709	7	6	0.0052	0.0038	74%	19:00:01	
TOP	5/17/2012	2363	1.2709	1.2744	0.0036	3:00:01	1.2747	1.2709	1.2744	6	8	0.0038	0.0036	93%	3:00:01	
BOTTOM	5/17/2012	2371	1.2744	1.2677	0.0067	11:00:01	1.2709	1.2744	1.2677	8	8	0.0036	0.0067	188%	11:00:01	
TOP	5/17/2012	2377	1.2677	1.2720	0.0043	17:00:01	1.2744	1.2677	1.2720	8	6	0.0067	0.0043	64%	17:00:01	
BOTTOM	5/18/2012	2390	1.2720	1.2656	0.0064	6:00:01	1.2677	1.2720	1.2656	6	13	0.0043	0.0064	149%	6:00:01	
TOP	5/21/2012	2410	1.2656	1.2811	0.0155	1:00:01	1.2720	1.2656	1.2811	13	20	0.0064	0.0155	243%	1:00:01	
BOTTOM	5/21/2012	2422	1.2811	1.2740	0.0071	13:00:01	1.2656	1.2811	1.2740	20	12	0.0155	0.0071	46%	13:00:01	
TOP	5/21/2012	2429	1.2740	1.2818	0.0078	20:00:01	1.2811	1.2740	1.2818	12	7	0.0071	0.0078	109%	20:00:01	
BOTTOM	5/25/2012	2517	1.2818	1.2508	0.0309	12:00:01	1.2740	1.2818	1.2508	7	88	0.0078	0.0309	398%	12:00:01	
TOP	5/28/2012	2535	1.2508	1.2614	0.0105	6:00:01	1.2818	1.2508	1.2614	88	18	0.0309	0.0105	34%	6:00:01	
BOTTOM	6/1/2012	2636	1.2614	1.2323	0.0291	11:00:01	1.2508	1.2614	1.2323	18	101	0.0105	0.0291	276%	11:00:01	
TOP	6/5/2012	2674	1.2323	1.2533	0.0210	1:00:01	1.2614	1.2323	1.2533	101	38	0.0291	0.0210	72%	1:00:01	
BOTTOM	6/5/2012	2681	1.2533	1.2419	0.0114	8:00:01	1.2323	1.2533	1.2419	38	7	0.0210	0.0114	54%	8:00:01	
TOP	6/7/2012	2734	1.2419	1.2609	0.0189	13:00:01	1.2533	1.2419	1.2609	7	53	0.0114	0.0189	166%	13:00:01	
BOTTOM	6/8/2012	2757	1.2609	1.2447	0.0161	12:00:01	1.2419	1.2609	1.2447	53	23	0.0189	0.0161	85%	12:00:01	
TOP	6/10/2012	2766	1.2447	1.2651	0.0204	21:00:01	1.2609	1.2447	1.2651	23	9	0.0161	0.0204	127%	21:00:01	
BOTTOM	6/11/2012	2790	1.2651	1.2466	0.0185	21:00:01	1.2447	1.2651	1.2466	9	24	0.0204	0.0185	91%	21:00:01	
TOP	6/12/2012	2801	1.2466	1.2511	0.0045	8:00:01	1.2651	1.2466	1.2511	24	11	0.0185	0.0045	24%	8:00:01	
BOTTOM	6/12/2012	2807	1.2511	1.2457	0.0054	14:00:01	1.2466	1.2511	1.2457	11	6	0.0045	0.0054	121%	14:00:01	
TOP	6/13/2012	2832	1.2457	1.2596	0.0140	17:00:01	1.2511	1.2457	1.2596	6	25	0.0054	0.0140	257%	17:00:01	
BOTTOM	6/13/2012	2835	1.2596	1.2557	0.0039	20:00:01	1.2457	1.2596	1.2557	25	3	0.0140	0.0039	28%	20:00:01	

Screenshot 5.2: Wave Analysis Summary Report

Pt = Turning Point

Range = Wave Range

Bars = Total candlesticks bars to form a wave

**Explanation:**

Screenshot 5.1 and 5.2 illustrate the **sample of analysis** by using wave analysis system. The analysis report is compromising with the price action chart.

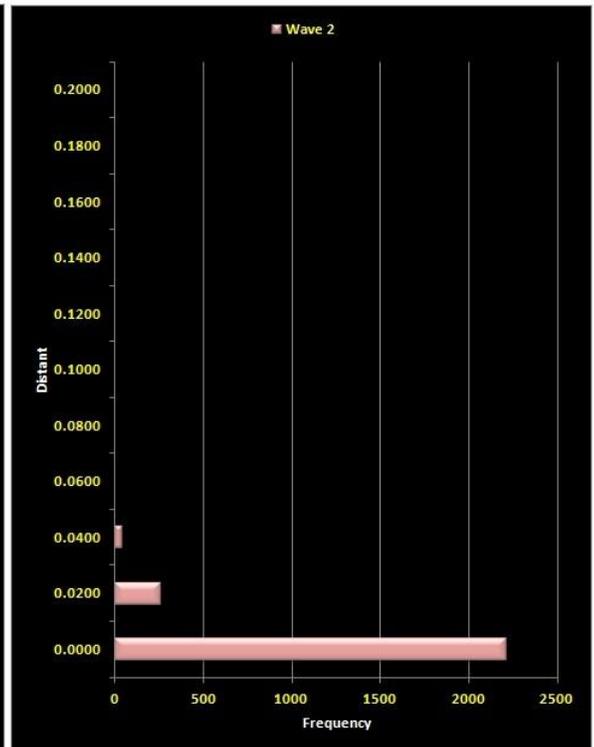
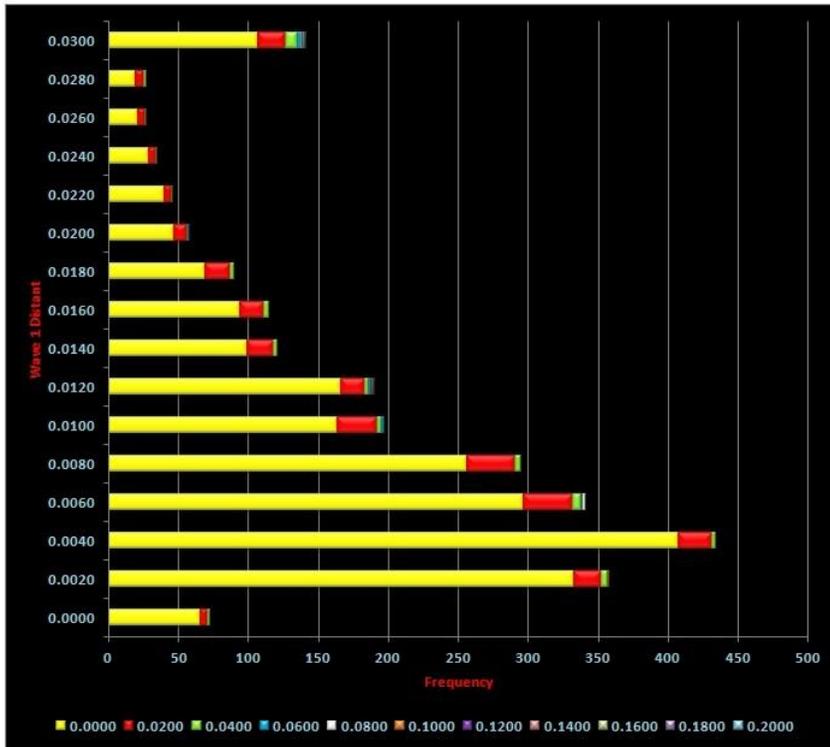
6/5/2012 8:00:01 = Wave is retraced from previous wave about Fibonacci 54% as shown in price action chart with price 1.2419 (Red box in screenshot 5.1 and blue box in screenshot 5.2)

Status of Analysis

Duration from	1/1/2004	to	12/30/2011
Calculation	EXECUTED		

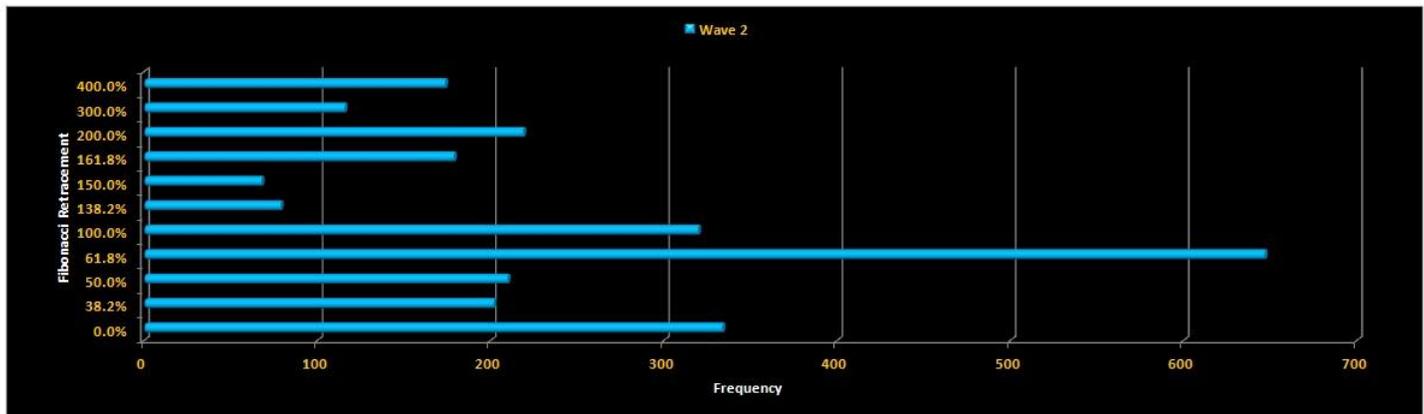
Status of 2nd Wave

Total	Distant(Mean)	Fibo(Mean)
2548	0.0116	157%

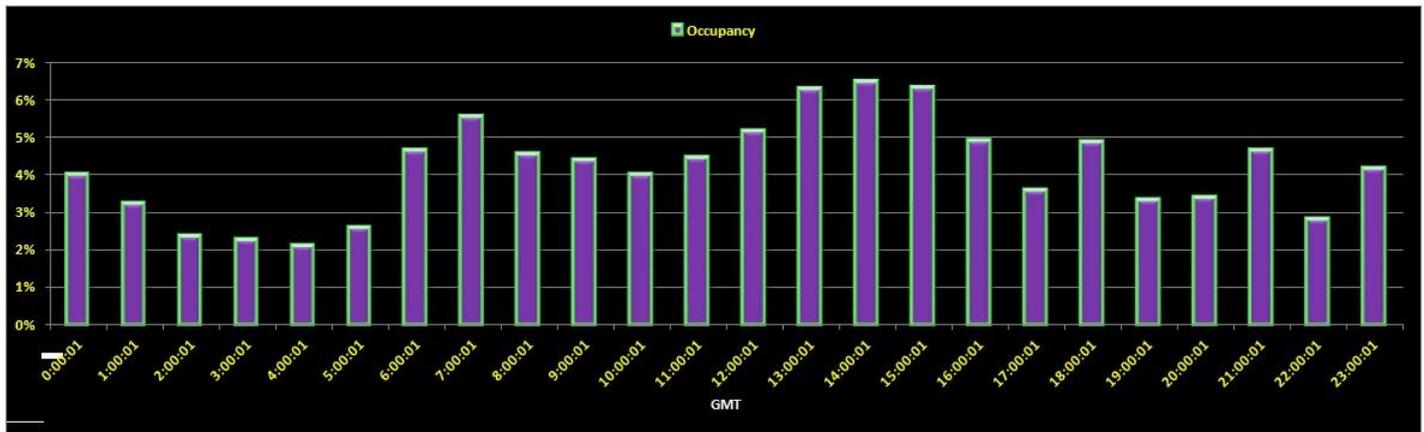


Screenshot 5.3: Frequency of 2<sup>nd</sup> Wave Distant

Left chart illustrates compound of frequency for 2<sup>nd</sup> wave distant with the respective of 1<sup>st</sup> wave distant  
 Right chart illustrates total frequency 2<sup>nd</sup> wave distant



Screenshot 5.4: Fibonacci Retracement % of 2<sup>nd</sup> Wave



Screenshot 5.5: Occupancy % of reversal point at respective timing GMT

**Explanation:**

Screenshot 5.3 to 5.5 is the analysis from 1/1/2004 to 31/12/2011.

From the screenshot 5.3, the distant between 0.00 pips and 0.02 pips is the highest frequency case for wave 2. And the mean distant for wave 2 is approximately 0.015 pips.

From the screenshot 5.4, wave 2 correction/retracement from previous wave happens most of the time is between Fibonacci 61.8% and 100.0%. And price tends to retrace into previous support/resistance and bound back.

From the screenshot 5.5, wave 2 correction/retracement happens most of the time at GMT 13:00:01 to 15:00:01. Therefore, strategy with scalping at time GMT 3:00:01 and 4:00:01 might be the right options because price tends to move further away after this time.

## Co-integration Analysis

All the base analysis's judgments are based on the high probability case that happens most of the time. Hence, setting up a strategy according to the analysis outcome is cannot be ignored. However, I would like to combine all the base analysis result into unique judgments in order to provide sophisticatedly prediction of price movement.

### Summary of high probability outcome from base analysis

#### 1. Pricing Structure: Daily

Candlestick bar +/-0.5% distant from open (Refer to page 4)

#### 2. Trend Behavior: Daily

Trending is dominating (Refer to page 10)

#### 3. Pattern: Daily

Long entry is 76.4% and target at 100.0%. Short entry is 23.6% and target at 0.0% (Refer to page 11)

#### 4. Intraday High and Low: Hourly in daily candlestick bar

Long entry position at GMT 4:00:01 or GMT 22:00:01. Short entry position between GMT 2:00:01 to GMT 5:00:01 (Refer to page 12)

#### 5. Wave Correction: Hourly in daily candlestick bar

Mean distant of wave 2 is 0.015 pips. Fibonacci Retracement is between 61.8% and 100.0%. The best entry position is at GMT 13:00:01 to 15:00:01 (Refer to page 16)

### Explanation:

Setup trending strategy is the right option since it has been proven.

Long entry position must coincide at between Fibonacci 76.4% and 100.0% (Trend Pattern) with -0.5% distant below daily open (Pricing Structure), and at between Fibonacci 61.8% and 100% (Wave Correction) with wave 2 distant approximately 0.015 pips. Timing is about GMT 13:00:01 to 15:00:01

Short entry position must coincide at between Fibonacci 23.6% and 0.0% (Trend Pattern) with +0.5% distant above daily open (Pricing Structure), and at between Fibonacci 61.8% to 100% (Wave Correction) with wave 2 distant approximately 0.015 pips. Timing is about GMT 13:00:01 to 15:00:01



Screenshot 6.1: Sample of Co-Integration setup (High probability) in price action chart

- Green and red line (Zigzag) = Pricing Structure
- Trending pattern on 29/05/2012 = Trend behavior
- Yellow, green and red straight line = Pattern
- Blue line = Wave correction
- Green and red arrow = Price constraint (Buying and selling price)

## Price movement briefing based on analysis

GMT	Indicator	Descriptions
00:00:01	-	Fresh start of price movement for <b>29/5/2012 GMT time</b> .
00:00:01 to 07:00:01	Red zigzag and yellow line	Price move upward and was restricted at +0.5% ( <b>Pricing Structure</b> ) and likelihood of price retrace at Fibonacci 61.8% from previous wave ( <b>Wave Correction</b> )
07:00:01 to 15:00:01	Green straight line	Price arrives at Fibonacci 0.0% ( <b>Pattern</b> ) and bound upward for some time.
15:00:01 to 15:00:01	Yellow line	Price break Fibonacci 0.0% ( <b>Pattern and Wave Correction</b> ) due to heavy selling and form a long red candlestick bar
15:00:01 to 23:59:59	Red zigzag line	Price arrives at -0.5% ( <b>Pricing Structure</b> ) and bound upward
23:59:59	-	Price hold at bottom area to form trending pattern ( <b>Trend Behavior</b> ) in the end of the day

### Explanation:

Pricing Structure = Price break -0.5% likely to signal downward movement and vice versa

Pattern = Price break Fibonacci 23.6% likely to signal downward movement and vice versa

Wave Correction = Price break previous wave support or Fibonacci 0.0% likely to signal downward movement

### Trading Decision:

Since we are trading for trending pattern based on high probability analysis, price could be either move upward or downward only.

#### Long position

Entry at Fibonacci 76.4% (**Yellow line**) due to no price constrain after break over this price level.

Target could be Fibonacci extension 100.0% (**Red straight line**)

Stop could be at +0.5% price (**Red zigzag line**) or Fibonacci 61.8% (**Yellow line**)

#### Short position

Entry at Fibonacci 0.0% (**Green straight line**) due to no price constrain after break over this price level between 1.246 to 1.252 price, which is around 60 pips opportunity to trade for.

Target could be Fibonacci extension -23.6% (**Yellow line**) or -0.5% price (**Zigzag line**)

Stop could be at Fibonacci 0.0% (**Green straight line**)

The price fluctuates within the area due to the price constrain, which is illustrated by green and red arrow. Meanwhile, timing could be another alternative option for trading decision. (Refer to page 12 & 16)



Screenshot 6.2: Sample of Co-Integration setup (High probability) in price action chart

- Green and red line (Zigzag) = Pricing Structure
- Trending pattern on 06/06/2012 = Trend behavior
- Yellow, green and red straight line = Pattern
- Blue line = Wave correction
- Green and red arrow = Price constraint (Buying and selling price)

## Price movement briefing based on analysis

GMT	Indicator	Descriptions
00:00:01	-	Fresh start of price movement for <b>6/6/2012 GMT time.</b>
00:00:01 to 11:00:01	Red line (Zigzag)	Price arrive at +0.5% ( <b>Pricing Structure</b> ) and retrace due to possibility of wave retracement at 61.8% to 100.0% from previous wave ( <b>Wave Correction</b> )
11:00:01	Yellow line	Price retrace to Fibonacci 23.6% ( <b>Pattern</b> )
11:00:01 to 15:00:01	Yellow and red line (Zigzag)	Price bound upward to test 2nd times the +0.5% ( <b>Pricing Structure</b> ) and breaks also Fibonacci 76.4% ( <b>Pattern</b> )
15:00:01 to 19:00:01	Red line	Price break Fibonacci 100% and arrive at Fibonacci 23.6% ( <b>Pattern</b> )
19:00:01 to 23:59:59	Blue square box	Price retrace to Fibonacci 100% ( <b>Pattern</b> ) and bound upward again
23:59:59	-	Price hold at top of the area to form trending pattern ( <b>Trend Behavior</b> ) in the end of the day

### Explanation:

Pricing Structure = Price break +0.5% likely to signal upward movement and vice versa

Pattern = Price break Fibonacci 76.4% likely to signal upward movement and vice versa

Wave Correction = Price break previous wave resistance or Fibonacci 100% likely to signal upward movement

### Trading Decision:

Since we are trading for trending pattern based on high probability analysis, price could be either move upward or downward only.

#### Long position

Entry at either -0.5% (**Bottom green arrow**) or Fibonacci 100% (**Red straight line**)

Target could be Fibonacci extension 123.6%

Stop could be at +0.5% price.

#### Short position

Entry at either +0.5% (**Top red arrow**) or Fibonacci 23.6% (**Yellow straight line**)

Target could be Fibonacci extension 0.0%

Stop could be at price 1.246

The price fluctuates within the area due to the price constrain, which is illustrated by green and red arrow. Meanwhile, timing could be another alternative option for trading decision. (Refer to page 12 & 16)

### Complex Co-integration Analysis

This is the ultimate complex analysis with the co-integration of multiple time frames with previous analysis. Price fluctuates up and down because of price constraint. In order to have precision explanation of price movement, you can find the demonstration as below.

	Time Frame	Hourly	Daily	Weekly	
<b>Long/Short</b>	<b>Trend Pattern Analysis</b>	<b>Trending</b>			
	<b>Intraday High and Low Analysis</b>				
	<b>Timing for Trending</b>	<b>GMT 02:00:01 to 04:00:01</b>			
	<b>Timing for Trend Reversal</b>	<b>GMT 13:00:01 to 15:00:01</b>			
	<b>Wave Correction Analysis</b>				
	<b>Timing for Wave Retracement</b>	<b>61.8% - 100%</b>		-	
	<b>Timing for Wave Continue</b>	<b>GMT 02:00:01 to 04:00:01</b>		-	
	<b>Wave Retracement</b>	<b>GMT 13:00:01 to 15:00:01</b>		-	
	<b>Wave 1 Distant (Pips)</b>	<b>0.04-0.06</b>	<b>0.035-0.045</b>	-	
	<b>Wave 2 Distant (Pips)</b>	<b>0.00-0.02</b>	<b>0.020-0.040</b>	-	
<b>Long</b>	<b>Pricing Structure Analysis</b>	-	<b>-0.5% OL/Low</b>	<b>-1.15% OL/Low</b>	
	<b>Pattern Analysis (Fibo %)</b>	-	<b>76.40%</b>		
<b>Short</b>	<b>Pricing Structure Analysis</b>	-	<b>+0.5% OH/High</b>	<b>+1.15% OH/High</b>	
	<b>Pattern Analysis (Fibo %)</b>	-	<b>23.60%</b>		

Screenshot 7.1: Multiple Time Frames Analysis

**Explanation:**  
 Screenshot 7.1 is the analysis from 1/1/2004 to 31/12/2011.

I ignore the hourly pricing structure analysis and pattern analysis due to inconsistent of price movement in pertaining to its volatility. Similarly, I ignore those lower time frame analyses as well. Meanwhile, I also ignore the weekly wave correction analysis because it is out of range and it doesn't provide any crucial result for this co-integration analysis.

The analysis results is the same for multiple time frames especially those is measured by percentage and timing. No matter how is the trend fluctuated, the pricing behavior still maintain its course but with different distant indeed. As shown from above screenshot, the mean distant for daily is smaller than weekly time frame. However, those analysis results could provide important signal for trading decision by these standardize/compromised measurement.



Screenshot 7.2: Pricing Structure setup at 04/06/2012 in price action chart



Screenshot 7.3: Pattern setup at 04/06/2012 in price action chart



**Explanation:**

Screenshot 7.2 to 7.5 is the analysis for 04/06/2012.

Screenshot 7.2: Pricing Structure

Price breaks daily +0.5% OH/High (**Red line**) and hold below weekly +1.15% OH/High (**Light blue line**)

Screenshot 7.3: Pattern

Price move upward from daily Fibonacci 76.4% to 123.6% (**Red line**) and hold between weekly Fibonacci 23.6% and 76.4% (**Yellow line**). Price break 76.4% signal upward strength movement and break 23.6% signal downward movement (Mention in page 19)

Screenshot 7.4: Wave Correction

Wave 2 retrace between 61.8% and 100.0% from previous hourly wave (**Red line**) and slightly break above daily previous wave 23.6% (**Yellow line**)

Screenshot 7.5: Intraday High and Low Timing

Price continue move upward between GMT 03:00:01 and 05:00:01 (**Red box**). Price correct/retrace down between GMT 13:00:01 and 15:00:01 (**Red box**).

**\*Information:**

*It is very complex if trading signal is based on the complex co-integration analysis. However, precision analysis has been proven and the respective pricing constraint is cannot be ignored for trading daily pattern. In fact, successful trader is cannot be denied if one decision system or so called algorithmic system has been created.*

<b>Product</b>	EUR/USD
<b>Time in SGT</b>	
<b>Time in GMT</b>	
<b>Open Price</b>	1.2399
<b>Current Price</b>	↑ 1.2461

**Probability Map**

	Hourly	Daily	Weekly
<b>Pricing Structure</b>	-	0.50%	0.50%
<b>Pattern</b>	-	101.8%	32.3%
<b>Wave Retracement</b>	47.4%	11.1%	-

**Position Advice**

	Count	Advice
<b>Long</b>	3	LONG
<b>Short</b>	0	

**Legend for Pricing Profile & Reference Table**

Manual Input
Up/Support
Down/Resistance
Decision Price
Current price status
Open price
PS Pricing Structure
PD Pattern Daily
PW Pattern Weekly
WH Wave Hourly
WD Wave Daily

**Pricing Profile**

Trend	Price	PS	PD	PW	WH	WD
UP	1.3236					Pt 1
	1.2903					61.80%
	1.2824	RES		RES		
	1.2698			76.40%		
	1.2614					Pt 1
	1.2542		1.15%			
	1.2503					61.80%
	1.2461		0.50%			
	1.2458	RES		RES		
	1.2418			76.40%		
	1.2414			23.60%		
	1.2399					
	1.2364					Pt 2
	1.2337		-0.50%			
	1.2328			23.60%		
	1.2323					Pt 2
	1.2288	SUP		SUP	SUP	
	1.2288	SUP		SUP	SUP	
	1.2256		-1.15%			

Screenshot 7.6: Algorithmic Trading Platform in Excel Format (Based on Co-Integration Analysis)

**Explanation:**

Screenshot 7.6 illustrates the trading decision for 4/6/2012 based on the analysis from screenshot 7.2 to 7.5. Current price shown 1.2461 explain that

- 1) Price is above daily +0.50% and below weekly +1.15% for pricing structure.
- 2) Price is above daily previous resistance or Fibonacci 100% and between weekly Fibonacci 23.6% and 76.4% for pattern.
- 3) Price is between hourly previous wave 23.6% and 61.8% and below daily previous wave 23.6% for wave retracement.