FOREX TRADING FOR BEGINNER WITH USING SIMPLE MOVING AVERAGE AS MAIN INDICATOR AND BOLLINGER BANDS AS SUPPORT AND RESISTANCE IN GBP/USD TF H1 PERIOD JULY 2012 – DECEMBER 2012

Adam Ultra Sjahbunan and Budhi Arta Surya
School of Business and Management
Institut Teknologi Bandung, Indonesia
adam.ultra@sbm-itb.ac.id

Abstract- *Main goal of this thesis is, how to make the beginner trader can achieve a profit quickly and easily while investing in forex, just using basic technical analysis published by master forex on the internet namely is Kang_Gun or familiarly called KG_Forex and without using a broker. In this paper the author will use the basic theory published by KG_forex there are 4 types of Simple Moving Average as the main indicator and Bollinger Bands as a line of support or resistance. SMA 24 is useful to look at the price movement in the past period of 1 day, SMA 120 is useful to see movement in a past period of 1week, SMA 480 is useful to look at the price movement in a past period of 1 month and SMA 4 is useful to look at the price movement in past 4 hours . A cross between SMA 24 and SMA 4 and when prices have bounced back from the upper / lower Bollinger Bands. This is would be a signal for the beginning trader to perform open position. This basic method is compared with a more advanced method. This comparative method using 5 different types of Linear Weighted Moving Average as the main indicator and uses two types of Bollinger Bands as a line of support / resistance. After doing all the calculation in GBP / USD TF H1. Apparently comparative method will provide more profit than the first method. However the comparison method will give more ambiguous signal to the beginner traders. The results obtained by the first method is very adequate for beginner traders. When you do all these things in the first method with discipline they can get up to 11400 USD profit. For traders who are pretty experienced the authors suggest to propagate the information by increasing the number of indicators used and do not forget to always look for fundamental information. This thesis only focus only on GBP/USD in TF H1 using forex trading software namely Meta Trader 4. In period July 2012 – Desember 2012. The outcome of this thesis the beginner trader can investing in forex future trading without using broker and they can get enough profit at he beginning. This research can prove the efficiency of KG basic method and its easy to use it.*

Keywords: forex, SMA, BB, LWMA, KG_forex, investing, trading, derivative,

Category:Finance; derivative, forex

Introduction

As a third world country, Indonesia had a lot of natural resources, a lot of people say it is a gift, but some people said is a curse. Natural wealth that we have caused us to be a slacker nation. we can only reap our natural resources without knowing how to cultivate it. Of course, with the passage of time we have the natural resources will be depleted, and it can create a shortage in our mining resources. It is affecting the way people think of Indonesia, many Indonesian people think all problems can be solved with easy and instant way. a way of thinking that can lead to losses, especially in the field of investment. a successful investment definitely requires experience and proper techniques, especially when we play in the field of derivatives.

There are many kinds of derivative products in Indonesia, but this research will be focused only on GBP/USD forex future trading. Many people are pros and cons with the presence of forex futures trading. some say that forex trading is an interesting and profitable investment, and some also say that it is too risky and unpredicteble. Almost everyone who have evert tried forex futures trading for the first time, unfortunately ended up with a loss or failure, because of its popping up financial institutions that offer term investment. They use what they call a broker or a financial planer to treat their customers' money. Based on BAPPEBTI, there are 77 official institution engaged in forex trading futures, some of them do not have an office. Many people do not fully understand the forex futures contracts. Some of them handed over their money to the broker and hope to get lucky and some are trying to play by yourself just by using fundamental analysts.

This research aims to prove that we do not need to use a broker to invest in currency futures trading. All we need is a good technical analysis. The author will reserach a technique that is taught by one of forex master in ForexIndo Community that we can find on www.forexindo.com. That master is well-known by its ID, kang_gun, or sometimes called KG forex. The author use basic KG forex method. SMA (Simple Moving Average) as the main indicator and BB (Bolinger Band) as a price barrier. The object of this method is GBP / USD research.

Theoritical Foundation

Candlestick Chart
Candlestick chart is an evolution from bar chart. It usually used to describe price movement in derivative, security and currency. Candlestick chart is made from combination between   bar chart and line chart.

Candlestick usually appears in black or white. Its followed by 2 pieces of tail, which is located above and below the candlestick. Black candlestick means open price is higher than closing price, white candlestick means closing price is higher than open price.
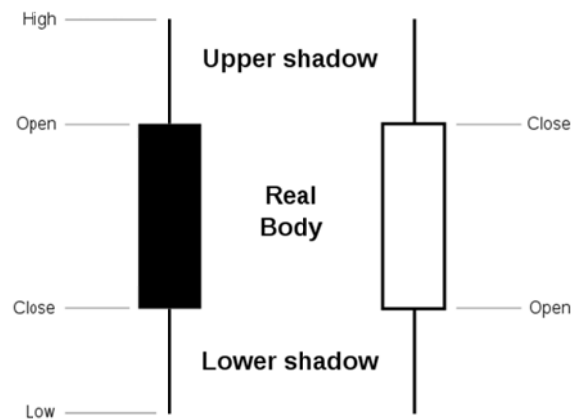

Figure 2.1-1: Candlestick

In this thesis the author will use GBP/USD in TF H1 which means each candlestick is valuable for 1 hour price.

2.2 Weighted Close
The Weighted Close type can measures an average of each candlestick price. The name its came from the fact that twice as much weight is given to the closing price as is given to the sum of the candlestick high and candlestick low. (Steven Achelis' book, *Technical Analysis A-Z)*

Equation 2.2-1
H + L + CC/4
Where:
H: highest price in candlestick
L: lowest price in candlestick
C: closing price in candlestick

Support and Resistance Line
Support line describes the price levels where the majority of investors believe the price level will rise so they decided to take buy positions. Resistance line describes the price level where most investors think the price at this level is too high and will go down so they decide taking sell positions.
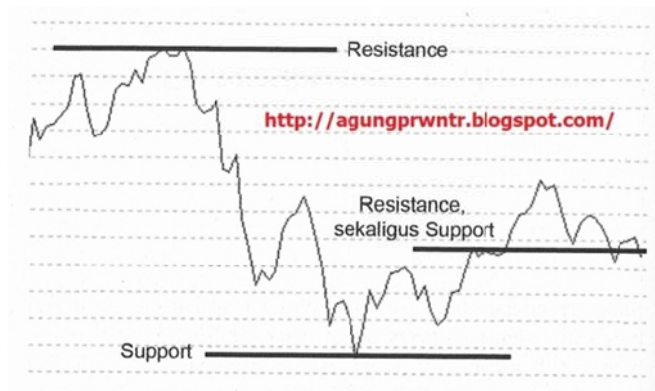

Figure 2.3-1: Support and Resistance Line

The author use Bollinger Bands to decide support and resistance line

Simple Moving Average (SMA)
Simple Moving Average which is one of the simplest indicators. Where basically, Simple Moving Average is calculated by adding the last closing price, example "x" is the period and then dividing that amount by X.(Bayu, 2011)

Figure 2.4-1: SMA

Equation 2.4-1

$$SMA = \frac{p_M + p_{M-1} + \cdots + p_{M-(n-1)}}{n}$$

$$SMA_{today} = SMA_{yesterday} - \frac{p_{M-n}}{n} + \frac{p_M}{n}$$

Where:
SMA: Simple Moving Average
Pm   : Price Mean
N   : Period

In this thesis the author use 4 SMA as main indicator. SMA 24 ((daily)there is 24 hour in one day) it means SMA from past 24 candlesticks in TF H1, SMA 120((weekly) there is 5 active trading days in a week, which is 5* 24 = 120) it means SMA from past 120 candlesticks in TF H1, SMA 480 ((monthly) there is 4 week in a month, which is 4 *120 = 480) it means SMA from past 480 candlesticks in TF H1 and SMA 4 (the average working hour is 8 hours and there is break between it) it means SMA from past 4 hours

Linear Weighted Moving Average (LWMA)
Linear weighted moving average or LWMA is a moving average tool which assigns more value to current prices and thus more responsive to latest price trends (Nobletrading.com, 2009)

Figure 2.5-1: LWMA

Equation 2.5-1

*LWMA = Sum (Close (k) * k, n) / Sum (k, n)*
Where:
Sum   : sum
Series Close (k): current closing price - Specifies whether   the data points represent the open, close, high, or low prices.
Sum (k, n)   : is the total sum of weight coefficients;
Period n   : smoothing period - The number of days in the moving average.

2.6 Bollinger Bands
Bollinger band is not action indicator. Bollinger bands used to become support line and resistance line. When its applied in trading software, its divided in to three main parts upper BB, lower BB and middle BB.

Equation 2.6-1
Upper band = Simple Moving Average + (2 x standard deviation)
Middle band = Simple Moving Average
Lower band = Simple Moving Average – (2 x standard deviation)

In this thesis the author uses BB 480. It means the equation is

Equation 2.6-2
Upper band = SMA 480 + (2 x standard deviation)
Middle band = SMA 480
Lower band = SMA 480 – (2 x standard deviation)

2.7 KG average indicator

KG average indicator is indicator that made for help the trader to determine the support and resistance line. This indicator divided into 3 states which is KG daily average line (red straight line), KG weekly average line (blue straight line), KG monthly average line (yellow straight line).

Figure 2.7-1: KG Daily Average

Equation 2.7-1
KG daily average line (TF H1) = 24 past candlestick/24
KG weekly average line (TF H1) = 120 past candlestick/120
KG monthly average line (TF h1) = 480 pas candlestick/480

2.8 Direct Rates Pair

Every foreign exchange pair has a different equation. This method only used in pair that it has USD as second pair example GBP/USD, EUR/USD, AUD/USD and NZD/USD

Equation 2.8-1
Profit / loss = (Buying Price – Selling Price) x contract size x lot

Data Analysis

A.   Data Collection
All the data is collect from forex trading software namey Meta trader 4 .ink

B.   Data Analysis
First Method Analysis
The first method will use Bollinger Band as support and resistance line. The intersect between SMA 24 and SMA 4 will be the main indicator for OP (open position). The applied price is weighted (HLCC/4). All transaction will use GBP/USD chart in TF H1

Second Method Analysis
In this method we use LWMA as main indicators. The author put another indicator in this method like KG average HLCC, BB 120 and MA 8. KG average work to show averaged price within a certain period. In this method there are three periods that author use is daily, weekly and monthly. Straight line that generated by KG average indicator can use to be the support and resistance line in conducting open position. BB 120 can become support/resistance along with BB 480. 3 LWMA

intersect will be the main indicator for OP. The applied price is weighted (HLCC/4). All transaction will use GBP/USD chart in TF H1

C. GBP/USD Analysis
All analyzes will be conducted in the month of July 2012 to December 2012. There is 28 figures that will show good position for transaction.
July 13th – July 19th Analysis

Figure 4.3.1-2 GBP/USD TF H1 July 2012

July 13th – July 19th First Analysis
The red lines in Figure 4.3.1-1 describe SMA 24 (daily). The movement is going uptrend and after cross yellow lines it going in to flat condition. It means the daily price is going uptrend too until cross yellow line. The blue lines in Figure 4.3.1-1 describe SMA 120 (weekly). The movement is slightly up. It means there is no significant price change in weekly period.

The yellow lines in Figure 4.3.1-1 describe SMA 480 (monthly) or Middle BB 480. The movement is remaining flat. it means there is no significant price change in monthly period. The white lines in Figure 4.3.1-1 describe SMA 4.its always moving follows the current price.

Lower dotted yellow lines in Figure 4.3.1-1 describe lower BB 480. It's in flat condition and it's suitable to be a support line. The pink cross in Figure 4.3.1-1 shows the right moment to take buy position. When the price bounced back to the top from lower BB 480 and SMA 24 intersect with SMA 4. The author takes buy position in July 13th 2012 at 09.00 AM. Candle stick value weighted close (HLCC/4) is 1.5428

The red cross in Figure 4.3.1-1 shows the right moment to TP (take profit) because the price has reached middle BB 480 and bounced down. The author takes profit in July 16th 2012 at 01.00 AM. Candle stick value weighted close (HLCC/4) is1.5585.
    1 lot = 100 USD
    1.5428 – 1.5585 = 0.0157 or 157 pips
    Gross profit is 157 x $10 = $1570 minus the cost of 3 days trading then net profit is $1564

The pink circles in Figure 4.3.1-1 indicate that the author can take buy position and the red circles shows author the right time to take profit. However, due to the lack of indicator author can't take any position, author don't have any prediction where price will go.

4.3.1.2 July 13th – July 19th Second Analysis

The red lines in Figure 4.3.1-2 describe LWMA 24 (daily). The movement is going uptrend and after cross yellow lines it going in to flat condition. It means the daily price is going uptrend too until cross yellow line. The blue lines in Figure 4.3.1-2 describe LWMA 120 (weekly). The movement is slightly up. It means there is no significant price change in weekly period.

The Yellow lines in Figure 4.3.1-2 describe LWMA 480 (monthly). The movement is remaining flat. it means there is no significant price change in monthly period.

White lines in Figure 4.3.1-2 describe LWMA 4. its always moving follows the current price. Magenta lines in Figure 4.3.1-2 describe LWMA 8. its always moving follows the LWMA 4.

Red straight lines in Figure 4.3.1-2 describe average price in daily. Its been 4 days The price placed above the Red straight lines. It means the price is in uptrend condition for 4 days compared to yesterday, 2 days ago, 3 days ago and 4 days ago.

Blue straight lines in Figure 4.3.1-2 describe average price in weekly. The price is placed above the Blue straight lines. It means the price still in uptrend condition compared to last week average price.

Yellow straight lines in Figure 4.3.1-2 describe average price in monthly. In July 13th until July 16th the price placed below the yellow straight lines and after that the prices placed above it. It means the price In July 13th until July 16th is lower than the price average last month and after that the price is higher than it.

There is 3 blue dotted lines in Figure 4.3.1-2. the one who placed above the price is describe upper BB 120, the one who placed below the price is lower BB120 and the one who placed between them is middle BB 120. All the blue dotted line is can be support or resistance line, depends on the author analysis.

There is 2 yellow Dotted lines in Figure 4.3.1-2. describe BB 480. The one who placed closed with KG monthly average line is middle BB 480 and the one who placed below the price is lower BB 480. Lower BB 480 is support line in this situation.

The pink arrow in Figure 4.3.1-2 shows the right moment to take buy position. When price bounce back to the top from daily average line and weekly average line, and at that moment there is 4 LWMA indicators intersect with each other. The author take buy position in July 16th 2012 at 02.00 PM. candle stick value weighted close (HLCC/4) is 1.5559

The red arrow in Figure 4.3.1-2 shows author the right moment to TP (take profit). When price is cross over upper BB 120 (weekly) and bounce down. The author take profit in July 17th 2012 at 06.00 AM. Candle stick value weighted close (HLCC/4) is 1.5662

1 lot = 100 USD
1.5662 – 1.5559 = 0.0103 or 103 pips
The profit is   103 x$10 = $1030

The blue arrow and the green arrow shows same OP and TP with Figure 4.3.1-1
Net profit in second method is $1030 + $1564 = $2594

D. Profit Analysis

FIRST METHOD ANALYSIS						
OP DATE	OP SIZE	TP DATE	TP SIZE	TYPE	SWAP	PROFIT
JULY 13 2012 09.00 AM	1,5428	JULY 16 2012 01.00 AM	1,5585	BUY	-6	$1.564
JULY 20 2012 08.00 AM	1,5696	JULY 23 2012 04.00 PM	1,5506	SELL	-6	$1.894
AUGUST 2 2012 03.00 PM	1,5527	AUGUST 2 2012 07.00 PM	1,5505	SELL		$220
AUGUST 8 2012 01.00 PM	1,5654	AUGUST 9 2012 05.00 AM	1,5677	BUY		$230
AUGUST 10 2012 04.00 PM	1,5670	AUGUST 13 2012 04.00 PM	1,5702	BUY	-6	$320
OCTOBER 3 2012 06.00 PM	1,6178	OCTOBER 9 2012 12.00 AM	1,6022	SELL	-8	$1.552
OCTOBER 11 2012 06.00 AM	1,6014	OCTOBER 17 2012 03.00 PM	1,6162	BUY	-8	$1.572
OCTOBER 18 2012 01.00 PM	1,6134	OCTOBER 22 2012 02.00 AM	1,6005	SELL	-4	$1.284
OCTOBER 24 2012 08.00 AM	1,5979	OCTOBER 25 2012 03.00 PM	1,6132	BUY	-2	$1.518
NOVEMBER 1 2012 06.00 PM	1,6125	NOVEMBER 5 2012 03.00 PM	1,5965	SELL	-4	$1.596
DECEMBER 3 2012 03.00 AM	1,6041	DECEMBER 4 2012 2.00 PM	1,6122	BUY	-2	$808
DECEMBER 6 2012 04.00 PM	1,6082	DECEMBER 7 2012 03.00 PM	1,6009	SELL	-2	$728
DECEMBER 21 2012 08.00 PM	1,6253	DECEMBER 24 2012 02.00 AM	1,6152	SELL	-6	$1.004
					TOTAL PROFIT	$14.290

SECOND METHOD ANALYSIS						
OP DATE	OP SIZE	TP DATE	TP SSIZE	TYPE	SWAP	PROFIT
JULY 13 2012 09.00 AM	1,5428	JULY 16 2012 01.00 AM	1,5585	BUY	-6	$1.564
JULY 16 2012 02.00 PM	1,5559	JULY 17 2012 06.00 AM	1,5662	BUY		$1.030
JULY 20 2012 05.00 AM	1,5706	JULY 23 2012 04.00 PM	1,5506	SELL	-6	$1.994
JULY 26 2012 10.00 AM	1,5482	JULY 26 2012 04.00 PM	1,5701	BUY		$2.190
AUGUST 1 2012 09.00 AM	1,5678	AUGUST 2 2012 03.00 AM	1,5530	SELL		$1.480
AUGUST 2 2012 03.00 PM	1,5527	AUGUST 2 2012 07.00 PM	1,5505	BUY		$220
AUGUST 8 2012 11.00 AM	1,5590	AUGUST 9 2012 05.00 AM	1,5677	BUY		$870
AUGUST 10 2012 03.00 PM	1,5601	AUGUST 10 2012 09.00 PM	1,5680	BUY		$790
AUGUST 16 2012 10.00 AM	1,5689	AUGUST 16 2012 08.00 PM	1,5738	BUY		$490
SEPTEMBER 28 2012 10.00 AM	1,6227	OCTOBER 1 2012 04.00 AM	1,6113	SELL	-6	$1.134
OCTOBER 3 2012 06.00 PM	1,6178	OCTOBER 9 2012 12.00 AM	1,6022	SELL	-8	$1.552
OCTOBER 11 2012 06.00 AM	1,6014	OCTOBER 12 2012 04.00 PM	1,6080	BUY	-2	$658
OCTOBER 15 2012 06.00 AM	1,6068	OCTOBER 17 2012 03.00 PM	1,6162	BUY	-2	$938
OCTOBER 18 2012 03.00 PM	1,6133	OCTOBER 22 2012 01.00 AM	1,5996	SELL	-8	$1.362
OCTOBER 24 2012 08.00 AM	1,5979	OCTOBER 25 2012 03.00 PM	1,6132	BUY	-2	$1.518
NOVEMBER 1 2012 06.00 PM	1,6125	NOVEMBER 5 2012 03.00 PM	1,5965	SELL	-4	$1.596
DECEMBER 3 2012 01.00 AM	1,6025	DECEMBER 4 2012 02.00 PM	1,6122	BUY	-2	$968
DECEMBER 6 2012 04.00 PM	1,6082	DECEMBER 7 2012 03.00 PM	1,6009	SELL	-2	$728
DECEMBER 21 2012 08.00 PM	1,6253	DECEMBER 24 2012 02.00 AM	1,6152	SELL		$1.010
DECEMBER 24 2012 03.00 PM	1,6158	DECEMBER 24 2012 03.00 AM	1,6115	SELL		$430
					TOTAL PROFIT	$22.522

After trading for 6 month the fist analysis gives $14.290 total profit, -4 average swap, 13 transaction, 1099 average profit and second profit gives $22.522 total profit, -2 average swap, 20 transaction, 1126 average profit. Second method gives higher profit than first method. But lot of ambiguity to take open position and take profit in second method. There is no exact support and resistance line in second method different with the first method. First method got exact support and resistance line, namely upper BB 480 and lower BB 480.

The average swap in first method is higher it means the first method more suitable for beginner trader than the second method. its hard for beginner trade to always check the chart every minute and the first method gives them more time to hold their transaction before they can take profit. The transaction in first method is less than the transaction in first method. it means the author have to be more active in trading if use the second method.

Conclusion and Recommendation

E. Conclusion
So the author can conclude the first method is better to use for beginner trading. Because the first method gives them exact position to open position and take profit. If the author compares it with the second method, the second method will give better profit and more transaction but in second method there is no exact point to open position. The beginner trading have to more experienced if want to use the second method, because there is more indicator in second method.

KG average in second method can give more opinion to the author to take position but it more complicated too. The beginner trader will confuse if there is too much information. So the author can conclude the first method is better than the second method if refers to beginner trader.

P.T. Valbury Asia Futures

Account: 22111001   Name: Kikyanto Setyadarma   Currency: USD   2012 November 2, 02:21

Closed Transactions:

Ticket	Open Time	Type	Size	Item	Price	S / L	T / P	Close Time	Price	Commission	Taxes	Swap	Profit
226	2012.03.13 12:35	balance	initial deposit #015867										10 000.00
252	2012.03.14 08:04	sell stop	1.00	eurusd.in	1.29914	1.30014	1.29814	2012.03.14 08:05	1.30373				cancelled
253	2012.03.14 08:04	buy stop	1.00	eurusd.in	1.30944	1.30844	1.31044	2012.03.14 08:05	1.30385				cancelled
254	2012.03.14 08:07	sell stop	1.00	eurusd.in	1.29349	1.29399	1.29299	2012.03.14 08:07	1.30351				cancelled
44334	2012.10.15 15:05	balance	[-] Commission for #43897										-20.00
43897	2012.10.12 15:59	buy	1.00	usdjpy.in	78.459	0.000	0.000	2012.10.15 15:05	78.716	0.00	0.00	-0.69	326.49
46327	2012.10.22 22:42	balance	[+^] Commission for #46296										-20.00
46296	2012.10.22 17:02	sell	1.00	usdjpy.in	79.940	0.000	79.224	2012.10.26 16:10	79.619	0.00	0.00	-12.49	403.17
48014	2012.10.26 16:10	balance	[-] Commission for #46296										-20.00

                               0.00   0.00   -140.74   11 725.68

Closed P/L: 11 584.94

Figure 5.1-1

P.T. Valbury Asia Futures

Account: 22111040   Name: Djoni Hamdani   Currency: USD   2012 November 7, 03:09

Closed Transactions:

Ticket	Open Time	Type	Size	Item	Price	S / L	T / P	Close Time	Price	Commission	Taxes	Swap	Profit
31170	2012.08.29 10:51	balance	initial deposit 16068										20 000.00
33484	2012.09.07 15:06	balance	[+] Commission for #33483										-20.00
34071	2012.09.11 16:12	buy limit	1.00	usdjpy.in	77.500	0.000	0.000	2012.09.12 10:24	77.849				cancelled
33483	2012.09.07 15:06	buy	1.00	usdjpy.in	78.340	0.000	0.000	2012.09.18 03:13	78.551	0.00	0.00	-6.22	268.62
35894	2012.09.18 03:13	balance	[-] Commission for #33483										-20.00
48554	2012.10.30 06:50	buy limit	2.00	usdjpy.in	79.200	0.000	0.000	2012.10.30 06:50	79.405				cancelled
48555	2012.10.30 06:50	buy limit	2.00	usdjpy.in	79.200	0.000	0.000	2012.10.30 06:55	79.524				cancelled
45232	2012.10.18 02:48	buy limit	1.00	usdjpy.in	78.250	0.000	0.000	2012.10.30 07:03	79.354				cancelled
48563	2012.10.30 06:55	buy limit	1.00	usdjpy.in	79.200	0.000	0.000	2012.10.30 13:28	79.396				cancelled

                               0.00   0.00   -19.04   2 873.47

Closed P/L: 2 854.43

Figure 5.1-2

Figure 5.1-1 shows trading from professionals broker with Kikyanto Setyadarma as a client. For 7 month trading the broker can give the client $11,584.94 as a total profit with more than 200 transactions.

Figure 5.1-2 shows trading from professionals broker with Djoni Hamdani as a client. For 2 month trading the broker can give the client $2,854.43 as a total profit with more than 100 transactions.

    *Ps: the author just show the early and the last transaction in figure 5.1-1 and figure 5.1-2. The rest of transaction will show in appendix

Figure 5.1-3

Figure 5.1-3 shows the author trading from January 23rd 2013 – February 22nd 2013. In this transaction the author can earn $2,522.20 for 1 month trading just only use first method.We can conclude the first method is the best method for beginner start forex future trading.

F. Recommendation
After the conclusion the author can give several recommendations
- The first method is enough to earn profit for beginner trader
- The second method is give better profit than the first method, so before use the second method they have to be more experienced and skillful in technical analysis.
- Beginner trader doesn't need to use broker to start investing in forex future trading. They just need good discipline to obey all the first method rule, don't let the emotion carried away the decision to open position and to take profit.
- There is no guarantee the first method can exactly predict the price movement. So remember don't be lazy to check the fundamental analysis

Reference

Steven Achelis' book. (2000).*Technical Analysis A-Z.*

Belajarforex. (2012). *Bollinger Bands definition and equation.*Retrieved 2013, from
http://belajarforex.com/indikator-teknikal/bollinger-bands.html

forexology. (2011). *Linear Weighted Moving Average definition and equation.* Retrieved 2013, from
http://forexology1.blogspot.com/2011/08/0025-linear-weighted-moving-average.html

Wikipedia. (2012). Simple Moving *Average definition and equation*. Retrieved 2013, from
http://en.wikipedia.org/wiki/Moving_average#Simple_moving_average

Wikipedia (2012). *Support and Resistance definition*. Retrieved 2013, from
http://en.wikipedia.org/wiki/Support_and_resistance

Mimi stock market (2012). *Weighted Close Definition*. Retrieved 2013, from
http://en.mimi.hu/stockmarket/weighted_close.html

Wikipedia. (2012). *Candlestick definition and figure*. Retrieved 2013, from
http://en.wikipedia.org/wiki/Candlestick_chart

Meta Trader 4 .ink. 2000-2013, MetaQuotes Software Corp.