



FxPro MT4 Backtest

A backtesting guide for MetaTrader 4



User Guide



Disclaimer

Under no circumstances, the backtesting process described in this guide should be interpreted as an indication of the potential protability of any Expert Advisor. Past performance is not indicative of future results. FxPro cannot guarantee the accuracy of performance and/ or results of the process described herein. Your individual circumstances and trading objectives have not been considered. Therefore, this should not be considered as a personal recommendation or investment advice.

The backtesting functionality of the Metatrader 4 platform allows a trader to check how an EA (Expert Advisor) would have traded in the past. It allows to test how dierent indicator inputs and other EA parameters may aect protability as well as allowing developers to test for any errors in the logic of their strategy.

Backtesting can save a lot of time, since it allows a trader to see trade results quickly, without having to test it real-time on a demo to gain results. It can also be used as a research tool, allowing a strategy developer to check how a given setup will work in a range market as opposed to trending market as well other market conditions.

The following guide will take you through the main steps in backtesting a strategy, as well as some of the common problems encountered.

Enable Strategy Tester

If the Strategy Tester does not appear on the screen, you can enable it by selecting View \rightarrow Strategy Tester or simply click **Ctrl+R**

the Strategy Tester window should appear similar to this:

🗟 File	View	Ins	ert Cł	narts	Tool	s W
<mark>ta</mark> r + te		Langu	lages		•	
N +-		Toolb	ars		•	ÌT
Market Wa	~	Status	Bar			
Symbol	Mbol EURUS GBPUS AUDU EURGE EURUP GBPJP NZDU USDC USDJP AUDU C C C C C C C C C C C C C		Bar			Ask
EURUS	NDDU SBPUS SBPUS SBPUS SBPUS SBPUS SBPJP SBPJP SBPJP SBDC SBPJP SDC SBPJP SDC SBPJP SDC SBPJP SDC SBPJP SDC SBPJP SDC SBPJS SC SC SC SC SC SC SC SC SC SC SC SC SC					9309
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GBPJP	2	Navig	ator	C	trl+N	.837
NZDU		Termi	nal	(Ctrl+T	8951
♦ USDC/	R.	Strate	gy Test	((Ctrl+R	3256
🔶 USDJP	a	Chats	h	5 1	Alt+M	.670
GOLD	-					5.21
🔶 USDCI	27	Full Se	creen		F11	7756
& GBPCH	IF		1.26	394	1.	26424
EURCH	IF		1.06	826	1.	06850

Set Inputs

To set the backtest input values for the EA, click on Expert properties \rightarrow Inputs tab.

Here you can set the value for each of the EA inputs or simply use the default ones. Only the **'Values'** column will be used and other columns are used for optimization and are irrelevant for the backtest.

Variable	Value	Start	Step	Stop
TakeProfit	1770.0	10.0	10.0	5000.0
✓ Lots	0.8	0.1	0.1	1.0
TrailingStop	30.0	30.0	0.0	0.0
MACDOpenLevel	3.0	3.0	0.0	0.0
MACDCloseLevel	2.0	2.0	0.0	0.0
MATrendPeriod	26	26	0	0

Select the Expert Advisor from the list

If the Expert Advisor that you wish to select is not in the list, make sure that its placed in the right folder eg: C:\Program Files\FxPro - Metatrader 4\experts



Select Symbol/ Currency pair

You can specify the symbol that you wish to be used for the backtest by selecting it from the drop down menu

GBPCHF	1 26460	1 26/08							
EURCHE		Euro vs US D British Pound							
FURCAD		Australian Dol		r					
EURCAD		Euro vs British		2					
GBPCAD		Euro vs Japan							
CHFJPY		British Pound v							
CADCHE		New Zealand US Dollar vs (1
		US Dollar vs Ja		14					
		OT Gold Ound		-					
Symbols Tick Chart		US Dollar vs S							
ivigator		British Pound							
	EURCHF.	Euro vs Swiss	Franc						_
FxPro MT4	EURCAD.	Euro vs Canad	dian Dollar						
· · · · ·	GBPCAD.	British Pound	vs Canadian D	ollar					
Common Favorites	CHFJPY.	Swiss Franc vs	Japanese Yen	1					
		Canadian Dolla							- F
Order /	CADJPY.	Canadian Dolla	ar vs Japanese	Yen					P
	GBPAUD,	British Pound	vs Australian D	ollar					
5486518 2020.02.	AUDJPY,	Australian Dolla	ar vs Japanese	Yen					PC PC
✤ Balance: 94 609.22	EURAUD,	Euro vs Austra	alian Dollar						
U Dalance, 54 005.22	AUDCAD.	Australian Doll	ar vs Canadiar	Dollar					- 6
	AUDNZD,	Australian Dol	lar vs New Zea	aland D	ollar				
	EURNZD.	Euro vs New	Zealand Dollar						
2 <u>1</u>	GBPNZD.	British Pound	vs New Zealar	nd Dolla	r				. L
Trade Exposure	ANZDCAD.	New Zealand	Dollar vs Cana	dian Do	ollar				
· · ·	NZDJPY.	New Zealand I	Dollar vs Japan	nese Ye	n				
2410 CONTRACTOR 200		Australian Doll							
Expert Advisor V		New Zealand							
Expert Maridon	EURTRY,	Euro vs Turkis	h Lira		2				× -
Symbol:	EURUSD	Euro vs US D	ollar						~
Model:	Eventiel	Abo most proo	ing method have	and on	اندبيد الد	able le	not time	framaa	
Model:	Every tick	(the most prec	ise method bas	section	ali avali	able le	astume	errames	~

Select data generation model

Open prices only method will check the prices and react to them only at the open of each bar. '**Every tick**' method will do so at every tick. Please note that MT4 does not use historical tick data and instead simulates tick based on 1 minute bars.

For more details about different data models used during testing see: http://articles.mql4.com/70

lvisor 🚿	MACD Sample.ex4
Symbo	ol: EURUSD, Euro vs US Dollar V
Mode	
Use date	 Every tick (the most precise method based on all available least timeframes to gr Control points (a very crude method based on the nearest less timeframe, the red Open prices only (fastest method to analyze the bar just completed, only for EAs)
Visual mode	2 Skip to 2

5

Time Period restrictions

If you want to restrict the EA to backtest over a specific time period, select 'Use date'.

Use date 🗹	From: 2019.10.01	■ ▼	lo:	2020.02.10	
Visual mode		Skip to		2020.02.10	

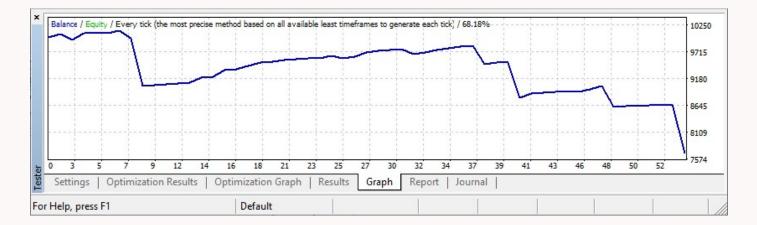
Now you can press Start (bottom right corner) and you should see the backtest start.

Viewing results

If your backtest was successful , you can view all the results in the results tab.

#	Time	Туре	Order	Size	Price	S/L	T/P	Profit	Balance	^
268	2019.10.08 17:39	modify	3	0.80	1.09730	1.09569	1.07960			
	2019.10.08 17:43	s/l	3	0.80	1.09569	1.09569	1.07960	128.80	10088.62	
270	2019.10.09 21:38	sell	4	0.80	1.09719		1.07949			
271	2019.10.09 23:39	modify	4	0.80	1.09719	1.09718	1.07949			
272	2019.10.09 23:39	modify	4	0.80	1.09719	1.09717	1.07949			
273	2019.10.09 23:39	modify	4	0.80	1.09719	1.09716	1.07949			
	2019.10.09 23:54	s/l	4	0.80	1.09716	1.09716	1.07949	2.40	10091.02	
275	2019.10.15 00:02	buy	5	0.80	1.10287		1.12057			
Settings	Optimization Results	Optimiza	tion Graph	Results	Graph Re	port Journal	1 40057			
r Help, press	• F1	Def	ault				1	1		ī

See the balance graph in the Graph tab



You can view the backtest summary report in the Report tab

×	Bars in test	3193	Ticks modelled	3551569	Modelling quality	68.18%	^
	Mismatched charts err	1					
	Initial deposit	10000.00			Spread	Current (15)	
	Total net profit	-2303.74	Gross profit	1534.20	Gross loss	-3837.94	
	Profit factor	0.40	Expected payoff	-42.66			
	Absolute drawdown	2327.74	Maximal drawdown	2491.55 (24.5	Relative drawdown	24.51% (2491.55)	
	Total trades	<mark>5</mark> 4	Short positions (won %)	31 (90.32%)	Long positions (won %)	23 (73.91%)	
			Profit trades (% of total)	45 (83.33%)	Loss trades (% of total)	9 (16.67%)	
		Largest	profit trade	129.60	loss trade	-979.56	
Tester	Settings Optimization Resu	Average Ilts Optimizatio	on Graph Results Graph	Report Journal	loss trade	-426.44	~
Fo	r Help, press F1	Defa	ult				

Here you can see the total net profit that the EA generated during the backtests, as well as other key performance metrics such as **'Profit factor'**, **'Drawdown'** and **'win percentage'**. For more information about what all of these numbers mean, please refer to the following article: http://articles.mgl4.com/83

Backtest chart

Expert Advisor 🛛 🗸 🗸	MACD Sample.ex4			~				~	Expert properties	
Symbol:	EURUSD, Euro vs US De	ollar			~		Period:	H1	~	Symbol properties
Model:	Every tick (the most preci	se method based on all av	ailable least timefra	ames to g	enera' 🗸		Spread:	Current	~	Open chart Modify expert
Use date [ate 🖌 From: 201	2019.10.01	-	To:	2020.02.10			Op	Optimization	
Visual mode]		Skip to		2020.02.10					
										Start
ettings Optimizati	on Results Optimizat	ion Graph Journal								
elp, press F1		Default	1	1	1	1		1		4164/1 kb

To view the historical trades plotted on the chart, simply click the 'Open Chart' button on the right hand side.



A new chart window will be opened and trades will be drawn on the chart you can scroll back and forth to review the historical trades of the EA.

Backtest troubleshooting

If the backtest does not show any trades or does not happen at all, click on the Journal tab to check for any errors:

Time	Message	^
▲ 2020.02.10 15:59:58.690	2020.01.28 23:41:10 MACD Sample EURUSD,H1: modify #53 buy 0.80 EURUSD at 1.10156 sl: 1.10192 tp: 1.11926 ok	
A 2020.02.10 15:59:58.690	2020.01.28 23:41:05 MACD Sample EURUSD,H1: modify #53 buy 0.80 EURUSD at 1.10156 sl: 1.10191 tp: 1.11926 ok	_
A 2020.02.10 15:59:58.690	2020.01.28 23:40:35 MACD Sample EURUSD,H1: modify #53 buy 0.80 EURUSD at 1.10156 sl: 1.10190 tp: 1.11926 ok	
A 2020.02.10 15:59:58.689	2020.01.28 23:01:40 MACD Sample EURUSD,H1: modify #53 buy 0.80 EURUSD at 1.10156 sl: 1.10189 tp: 1.11926 ok	
A 2020.02.10 15:59:58.689	2020.01.28 23:01:38 MACD Sample EURUSD,H1: modify #53 buy 0.80 EURUSD at 1.10156 sl: 1.10188 tp: 1.11926 ok	
2020.02.10 15:59:58.689	2020.01.28 23:01:36 MACD Sample EURUSD,H1: OrderModify error 1	
A 2020.02.10 15:59:58.689	2020.01.28 23:01:36 MACD Sample EURUSD,H1: OrderModify error 1	
2020.02.10 15:59:58.689	2020.01.28 23:01:33 MACD Sample EURUSD,H1: OrderModify error 1	Ξ.
Settings Optimization F	esults Optimization Graph Results Graph Report Journal	
r Help, press F1	Default 9716/2 kb	

If click the 'Start' button and backtest does not start, the most likely issue is that there is no data in the history centre

Time	Message	
2020.02.10 16:46:17.327	TestGenerator: no ticks generated, history of EURUSD,H1 begins from 2020.02.10 0:00	
2020.02.10 16:46:15.323	TestGenerator: current spread 15 used	
2020.02.10 16:45:57.286	TestGenerator: no ticks generated, history of EURUSD,H1 begins from 2020.02.10 0:00	
2020.02.10 16:45:55.282	TestGenerator: current spread 15 used	
2020.02.10 16:45:22.878	EURUSD,H1: 3550569 tick events (2192 bars, 3551569 bar states) processed in 0:00:02.312 (total time 0:00:06.531)	
A 2020.02.10 16:45:22.877	2020.02.07 23:59:49 Tester: order #54 is closed	
2020.02.10 16:45:22.768	2020.02.04 03:47:03 MACD Sample EURUSD,H1: BUY order opened : 1.1064	
A 2020.02.10 16:45:22.768	2020.02.04 03:47:03 MACD Sample EURUSD,H1: open #54 buy 0.80 EURUSD at 1.10640 tp: 1.12410 ok	
Settings Optimization R	esults Optimization Graph Results Graph Report Journal	
		_
r Help, press F1	Default	

In this case you will need to either Download or import the data

To download historical data go to Tools \rightarrow History Centre

📆 File View	Insert Charts	Tool	s Window Help		_
🗣 • 🖶 • 🛛	0 🔶 🔂 🔲	E.	New Order	F9	Tra
► -+ I	- / 🕸 🗄		History Center	F2	H4
Market Watch: 16:4	8:54		Global Variables	F3	4 1.0
Symbol	Bid	5	MetaQuotes Language Editor	F4	=177
EURUSD	1.09293	Ť			-
GBPUSD	1.29413	8	Options	Ctrl+O	
AUDUSD	0.66816	0.	66832	111	

Select the Symbol that you wish to backtest for and the download dialog box will appear.

mbols:	Database: 6378 records						
FxPro MT4	Time	Open	High	Low	Close	Volume	
Forex Majors	0 2020.02.10 16:50	1.09286	1.09290	1.09284	1.09290	20	ī
(S) CADCHF	2020.02.10 16:45	1.09292	1.09315	1.09285	1.09285	290	ï
	0 2020.02.10 16:40	1.09282	1.09292	1.09271	1.09291	179	į
EURCAD	2020.02.10 16:35	1.09292	1.09295	1.09278	1.09280	217	į
	0 2020.02.10 16:30	1.09279	1.09294	1.09269	1.09290	320	į
	2020.02.10 16:25	1.09297	1.09302	1.09271	1.09278	219	i
(B) EURJPY	0 2020.02.10 16:20	1.09291	1.09318	1.09288	1.09295	228	į
EURUSD	0 2020.02.10 16:15	1.09279	1.09304	1.09278	1.09290	217	
	2020.02.10 16:10	1.09287	1.09295	1.09264	1.09278	333	333
5 Minutes (M5)	2020.02.10 16:05	1.09326	1.09331	1.09276	1.09286	509	,
	0 2020.02.10 16:00	1.09318	1.09328	1.09297	1.09325	462	
	2020.02.10 15:55	1.09356	1.09362	1.09292	1.09319	525	j
	2020.02.10 15:50	1.09428	1.09430	1.09353	1.09358	531	ļ
Daily (D1)	2020.02.10 15:45	1.09466	1.09469	1.09425	1.09429	274	į
	2020.02.10 15:40	1.09484	1.09501	1.09457	1.09467	247	į
Monthly (MN)	2020.02.10 15:35	1.09492	1.09498	1.09484	1.09485	173	;
GBPCAD	2020.02.10 15:30	1.09518	1.09519	1.09474	1.09491	275	

Select the timeframe that you wish to backtest by double-clicking on it Then simply click **Download**

If during your backtest you get 'Order Send error 130' or 'Order Modify error 130', the take profit or stop loss is too close to the opening price of the trade or to the current price.

* Time	Message								_
A 2013.06.05 15:43:56	2012.01.12 02:45 MAG	CD Sample EURUSD	M15: OrderMod	lify error 130					
A 2013.06.05 15:43:56	2012.01.12 02:45 MAG	CD Sample EURUSD	M15: OrderMod	lify error 130					
A 2013.06.05 15:43:56	lify error 130								
A 2013.06.05.15:43:56 Settings Results	2012.01.12.02.44 MAG Graph Report _ Journal		M15: OrderMod	lify error 130					
For Help, press F1	Default	1	1	12	16	1	E	1305/1 kb	

If you see an error similar to this one: there must be an error in the code of the EA and it cannot compile. You will not be able to backtest the EA until the error is resolved.

×	Time	Message								
	A 2013.06.05 16:21:50	Cannot open file 'C:\Pro	ogram Files (x86)	MT4_3\experts\M	ACD Sample.ex	4' on the ,				
ter										
Tes	Settings Journal									
Fo	Help, press F1	Default			1	1	1	8	 8/0 kb	1

If you see an error similar to this one: the EA needs a custom indicator to be present in order for it to work. Please put the relevant indicator into the 'indicators' subfolder of the 'experts' folder where your EA is.

î	Time	Message									
	a 2013.06.05 16:26:00	2012.01.02 00:28 Cannot	open file 'C:\Program Fil	les (x86)\MT4_3	\experts\indic	ators\SomeC	ustomIndicate	r.ex4' on th	e EURUSD,	415	
	A 2013.06.05 16:26:00	2012.01.02 00:18 Cannot	open file 'C:\Program Fi	les (x86)\MT4_3	\experts\indic	ators\SomeC	ustomIndicate	r.ex4' on th	e EURUSD,N	M15	
	A 2013.06.05 16:26:00	2012.01.02 00:18 Cannot	open file 'C:\Program Fi	les (x86)\MT4_3	\experts\indic	ators\SomeC	ustomIndicate	r.ex4' on th	e EURUSD,N	415	
	A 2013.06.05 16:26:00	2012.01.02 00:18 Cannot	open file 'C:\Program Fi	les (x86)\MT4_3	\experts\indic	ators\SomeC	ustomIndicate	r.ex4' on th	e EURUSD,N	M15	
	A 2013.06.05 16:26:00	2012.01.02 00:18 Cannot open file 'C:\Program Files (x86)\MT4_3\experts\indicators\SomeCustomIndicator.ex4' on the EURUSD,M15									
in i	A 2013.06.05 16:26:00	2012.01.02 00:18 Cannot	open file 'C:\Program Fil	les (x86)\MT4_3	\experts\indic	ators\SomeC	ustomIndicate	r.ex4' on th	e EURUSD,N	415	
Test	Settings Results Gr	aph Report Journal									
	r Help, press F1	Default	2012.01.02 05:30	0:1.29275	H: 1.29277	L: 1.29215	C: 1.29247	V: 268		28/0 kb	



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