

# 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	Char	ts	Tools	W
<b>₽</b> - Ę		Langu	ages			٠	
<b>N</b> +		Toolba	ars			•	ĨT
Market Wa	~	Status	Bar				
Symbol	~	Charts	s Bar				Ask
EURUS							9309
		Symbo	ols		Cti	rl+U	9331
AUDU		Marke	+ 14/-	tch	Ct.		5811
🔶 EURGE	-	WINIKE	L VVd	ten	Cu		4525
🔶 EURJP	$\Phi$	Data V	Vind	DW	Ct	rl+D	.880
	2	Navig	ator		Ctr	I+N	.837
NZDU		Termin	nal		Ct	rl+T	3951
	10	Strate	gy Te	star	Ct	rl+R	3256
🚸 USDJP	a	Chats		45	Alt	t+M	.670
🕹 GOLD							5.21
🔶 USDCI	2	Full So	reen			F11	7756
	HF			1.2639	4	1.2	6424
EURCH	Image: Margin Margin   Image: Image: Margin Margin   Image: Image: Image: Margin   Image: Image		3	1.0682	6	1.0	6850

#### 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.

optimization				
Variable	Value	Start	Step	Stop
✓ TakeProfit	1770.0	10.0	10.0	5000.0
✓ Lots	0.8	0.1	0.1	1.(
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.(
MATrendPeriod	26	26	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 26408	
EURCHE	EURUSD, Euro vs US Dollar GBPUSD, British Pound vs US Dollar	^
EURCAD	AUDUSD, Australian Dollar vs US Dollar	
EURCAD	EURGBP, Euro vs British Pound	
GBPCAD	EURJPY, Euro vs Japanese Yen	
CHFJPY	GBPJPY, British Pound vs Japanese Yen	
CADCUE	INZDUSD, New Zealand Dollar vs US Dollar	
CADCHF	USDLAD, US Dollar vs Canadian Dollar	
	TOSDJET, US Dollar vs Japanese Ten	
Symbols Tick Chart	USDCHE LIS Dellar ve Swige France	
	GRECHE British Pound ve Swiss Franc	
ivigator	ELIBCHE Furn ve Swiee Franc	
FxPro MT4	EURCAD, Euro vs Canadian Dollar	
T 🚗 .	GBPCAD, British Pound vs Canadian Dollar	
Common Favorites	CHE/PY Swiss Franc vs Japanese Yen	
	CADCHE Canadian Dollar vs Swiss Franc	
Order /	CADJPY, Canadian Dollar vs Japanese Yen	
order	GBPAUD, British Pound vs Australian Dollar	
5486518 2020.02.1	AUDJPY, Australian Dollar vs Japanese Yen	
A Balance: 04 600 22 1	EURAUD, Euro vs Australian Dollar	
U Dalance. 34 003.22	AUDCAD, Australian Dollar vs Canadian Dollar	
	AUDNZD, Australian Dollar vs New Zealand Dollar	
	EURNZD, Euro vs New Zealand Dollar	
	GBPNZD, British Pound vs New Zealand Dollar	
Trade Exposure	NZDCAD, New Zealand Dollar vs Canadian Dollar	
·	NZDJPY, New Zealand Dollar vs Japanese Yen	
	AUDCHF, Australian Dollar vs Swiss Franc	
Expert Advisor 🗸 🗸	NZDCHF, New Zealand Dollar vs Swiss Franc	
	EURTRY, Euro vs Turkish Lira	~
Symbol:	EURUSD, Euro vs US Dollar	~
Model:	Every tick (the most precise method based on all available least t	timeframes I 🗸

## 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	el: EURUSD, Euro vs US Dollar V
Mode	el: Every tick (the most precise method based on all available least timeframes : 🔨 🕻
Symbol: EURUSD, Euro vs US Dollar Model: Every tick (the most precise method based on all available least timeframes to generate the formation of the second secon	
Visual mode	II Skip to 20

#### 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		To:	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			
Tester	Settings	Optimization Results	Optimiza	tion Graph	Results	Graph Re	port   Journa				•
Fo	r Help, pres	s F1	Def	fault			1	1			

#### 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	54	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 Its   Optimizati	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.mql4.com/83

### **Backtest chart**

Expert Advisor 🛛 🗸 🗸	V MACD Sample.ex4								~	Expert properties	
Symbol: Model: Use date ☑	EURUSD, Euro vs US De	ollar			1		Period:	H1	~	Symbol properties	
	Every tick (the most preci	se method based on all avai	able least timeframes to general $\sim$			Spread:		Current ~		Open chart	
	ate 🖌 From: 20	2019.10.01		To: 2020.02.10	02.10			Op	Optimization	Modify expert	
Visual mode	]		Skip to	2020.	)2.10						
										Start	
ettings Optimizati	on Results   Optimizati	ion Graph   Journal									
In press F1		Default		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	^
	A 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	
0	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	
3	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	
	▲ 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	
Tester	Settings   Optimization R	esults   Optimization Graph   Results   Graph   Report Journal	*
Fo	r Help, press F1	Default 9716/2 kt	, //

#### 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	
3	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	
Teste	Settings   Optimization R	esults   Optimization Graph   Results   Graph   Report Journal	
Fo	r Help, <mark>p</mark> ress F1	Default 10129/2 kb	

#### 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	Too	ls Window Help		_
🗛 - 🔁 - 🛛	0 🕂 🔂 🗖	E.	New Order	F9	oTra
► +   I	- / 🖗 🗄	8	History Center	F2	H4
Market Watch: 16:4	3:54		Global Variables	F3	4 1.0
Symbol	Bid	5	MetaOuotes Language Editor	F4	=177
EURUSD	1.09293				
GBPUSD	1.29413	8.	Options	Ctrl+O	1000
AUDUSD	0.66816	0.	66832	110	

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

mbols:	Database: 6378 r	ecords						
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	J
CADCHF	\$ 2020.02.10	16:45	1.09292	1.09315	1.09285	1.09285	290	5
	0 2020.02.10	16:40	1.09282	1.09292	1.09271	1.09291	179	9
EURCAD	\$ 2020.02.10	16:35	1.09292	1.09295	1.09278	1.09280	217	7
	0 2020.02.10	16:30	1.09279	1.09294	1.09269	1.09290	320	5
(S) EURGBP	\$ 2020.02.10	16:25	1.09297	1.09302	1.09271	1.09278	219	3
🛞 EURJPY	0 2020.02.10	16:20	1.09291	1.09318	1.09288	1.09295	228	3
EURUSD	0 2020.02.10	16:15	1.09279	1.09304	1.09278	1.09290	217	7
EURGBP BEURGBP BEURGBP BEURUSD BEURUSD BEURUSD BEURUSD BEURUSE (M1) BEURUSE (M15) BEURUSE	2020.02.10	16:10	1.09287	1.09295	1.09264	1.09278	333	3
	\$ 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	
	2020.02.10	15:50	1.09428	1.09430	1.09353	1.09358	531	1
Daily (D1)	\$ 2020.02.10	15:45	1.09466	1.09469	1.09425	1.09429	274	
	2020.02.10	15:40	1.09484	1.09501	1.09457	1.09467	247	7
Monthly (MN)	\$ 2020.02.10	15:35	1.09492	1.09498	1.09484	1.09485	173	3
GBPCAD	2020.02.10	15:30	1.09518	1.09519	1.09474	1.09491	275	5
Download	Add	Edit	Delete	Exp	ort	Import	Clos	se

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	<u>^</u>
	A 2013.06.05 15:43:56	2012.01.12 02:45 MACD Sample EURUSD, M15: OrderModify error 130	
	A 2013.06.05 15:43:56	2012.01.12 02:45 MACD Sample EURUSD,M15: OrderModify error 130	
	A 2013.06.05 15:43:56	2012.01.12 02:45 MACD Sample EURUSD,M15: OrderModify error 130	
Tester	A 2013.06.05.15:43:56 Settings   Results   Gra	2012 01 12 02:44 MACD Sample FURUSD M15: OrderModify error 130 aph   Report Journal	
Fo	r Help, press F1	Default 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								1
	<b>A</b> 2013.06.05 16:21:50	Cannot open file 'C:\Pro	gram Files (x86)	MT4_3\experts\M	ACD Sample.ex	4' on the ,				
ter										
Tesl	Settings Journal									
Foi	r Help, press F1	Default					19		8/0 kb	

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.

Time	Message
<b>A</b> 2013.06.05 16:26:00	2012.01.02 00:28 Cannot open file 'C:\Program Files (x86)\MT4_3\experts\indicators\SomeCustomIndicator.ex4' on the EURUSD,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
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
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
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
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
Settings   Results   Gr	raph   Report Journal
r Help, press F1	Default 2012.01.02.05:30 O: 1.29275 H: 1.29277 L: 1.29215 C: 1.29247 V: 268 UBBi 28/0 kb

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