

“Going Automated” Strategies and Systems

By Larry Levy

In recent years there has been expansive growth in automated FX trading. For example, whilst the majority of clients at Strategy Runner, (the vendor that facilitates automated trading connecting a variety of automated trading applications to a range of brokers) are still futures based, the gap is rapidly closing in favor of FX.

At Swiss based MIG Investments SA, IT consultant and programmer Anna Serbinenko describes the growth of interest in automated FX trading as “exponential”. Similar sentiments have been expressed at most companies providing specialist services specially tailored to automated trading. This trend towards automated trading in

general and even more so automated FX looks set to continue. The mere idea that you can develop or just buy/lease a system the shelf that then automatically works profitably appears to be irresistible, whether or not it turns out to be the case in many cases.

Reasons to “go automated” include increased reliability, lack of emotional overload and other factors that often lead to unwarranted losses in the market. Being able to let an “automated system” trade for one also lifts the veil of personal responsibility and blame from the trader to the system itself and enables such systems to be better appreciated with the knowledge that ones own input or lack thereof is not a factor in the outcome of trades.

Despite its attractions, fully automated trading clearly has a long way to go before it comes to dominate the overall FX market.



Anna Serbinenko

Many institutional brokers and banks argue that given the human resources and techniques available to them, fully automated solutions could only occupy a small portion of their overall trading activity plan.

Which Strategy: “Pick ‘n Choose” vs. “Build Your Own”?

Developing your own system can be a time consuming occupation. A learning curve that starts as an initial fascination can often end up as an expensive and time consuming project often lasting

years, as different platforms are experimented on, and supposedly promising systems are developed only to be discarded.

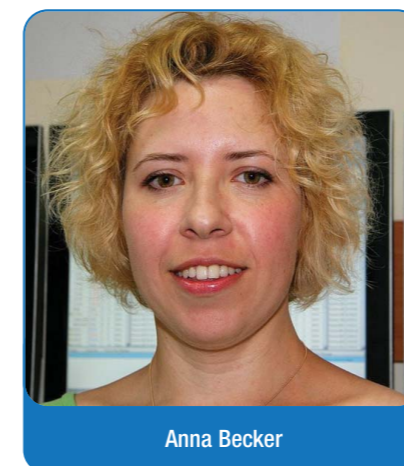
Ultimately a small percentage of developers will go onto develop systems robust enough to make consistent profits.

One way to get into the automated systems trading market more easily is to lease a system or lease the signals – either as a buyer or as a seller. This still allows self development along the way, but allows those with limited experience and or time an easy way to start trading with automated systems. A number of solutions from a variety of “pick ‘n choose” black box’s with real time track records to a number of “develop your own” solutions are available, and everything in between.

Below we review briefly a variety of platforms for either building a system, leasing a system’s signal output, or a mix of the two. On the other side of the coin, systems can be marketed through many of the companies below:

Strategy Runner (SR) www.strategyrunner.com

Over 200 strategies are tracked based on real time (not just back tested) performance data appear to be available specifically for spot FX, priced from \$75 /month upwards. Anna Becker, CEO of Strategy Runner estimates the addition of over 10 new third-party strategy providers in the coming month to the Investment Center.



Anna Becker

Strategy Runner additionally caters to self and assisted development of strategies on its own C++ based platform, as well as execution

Vendor	Portfolio	Markets	Frequency	Cost	% Capital	Total P&L	Annual
CreativeBreakthrough-FX	CreativeBreakthroughEUR	Curr. Spot	Swing	\$ 79	\$ 8000	73.13 %	
AngloFX	ECTores	Curr. Spot	Day Trading	\$ 150	\$ 5000	7.4 %	
AI Analytics	NeuroFX Euro	Curr. Spot	Day Trading	\$ 199	\$ 10000	1.7 %	
CreativeBreakthrough-FX	CreativeBreakthroughJPY	Curr. Spot	Swing	\$ 79	\$ 8000	12.4 %	
FX Trader.com	Capstone FX DW-III	Curr. Spot	Day Trading	\$ 179	\$ 15000	0 %	
FX Trader.com	Capstone FX DW-II	Curr. Spot	Day Trading	\$ 219	\$ 15000	0 %	
TIBER FOUND	TIBER FOUND	Curr. Spot	Swing	\$ 79	\$ 10000	0 %	
FX Trader.com	Capstone FX DW-T	Curr. Spot	Day Trading	\$ 129	\$ 15000	0 %	
FEMB Systems-FX	E_Level EUR-USD	Curr. Spot	Day Trading	\$ 400	\$ 5000	0 %	
BullDog Trading Systems-FX	Forex Portfolio	Curr. Spot	Day Trading	\$ 249	\$ 20000	0 %	
CreativeBreakthrough-FX	CreativeBreakthroughY	Curr. Spot	Swing	\$ 79	\$ 8000	0 %	
CreativeBreakthrough-FX	CreativeBreakthroughGBP	Curr. Spot	Swing	\$ 79	\$ 8000	0 %	
FEMB Systems-FX	E_Level USD-CHF	Curr. Spot	Day Trading	\$ 400	\$ 5000	0 %	
IZaklab	READY	Curr. Spot	Swing	\$ 750	\$ 2000	0 %	
InvestTechFX Technologies	InvestTechFX CHF-USD	Curr. Spot	Day Trading	\$ 250	\$ 10000	0 %	
InvestTechFX Technologies	InvestTechFX JPY-USD	Curr. Spot	Day Trading	\$ 250	\$ 10000	0 %	
FEMB Systems-FX	E_Level GBP-USD	Curr. Spot	Day Trading	\$ 400	\$ 5000	0 %	
CreativeBreakthrough-FX	CreativeBreakthroughCHF	Curr. Spot	Swing	\$ 79	\$ 8000	0 %	
Advanced Risk Advisors FX	FX-2 GBP-USD	Curr. Spot	Day Trading	\$ 75	\$ 10000	0 %	
Advanced Risk Advisors FX	FX-1 EUR-USD	Curr. Spot	Day Trading	\$ 75	\$ 10000	0 %	

Pick 'n mix page of systems available for FX at Strategy Runner

input from other system signal generation platforms such as Trade Station, Excel, MetaTrader and C2 to multiple execution platforms at different broking houses.

The key difference or advantage to using SR’s own language is that a system then resides on the server side at the brokers’ facilities rather than on the client PC. This solution enables fully automated execution, where clients can merely monitor the strategies performance, and is less susceptible to breakages and delays caused by communications

Collective2 (C2) www.collective2.com

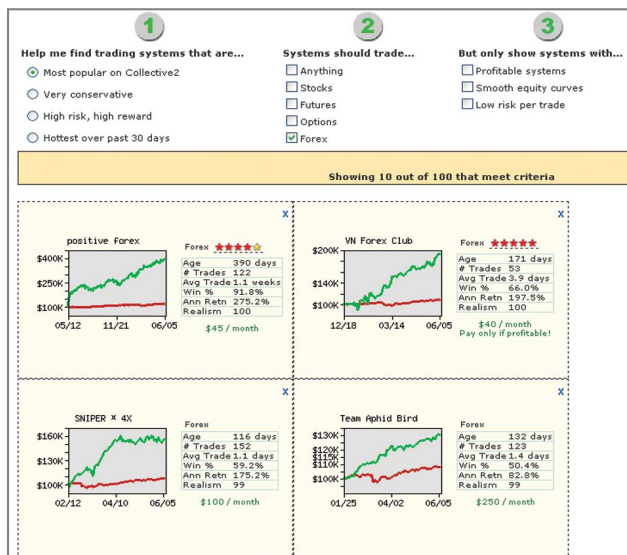
A few clicks on one tab quickly reveals the 25+ most popular FX systems available for lease, generally priced at under \$100/mth). Around 300 forex systems are listed at C2.

The Strategy Runner team





Anyone can list and sell a system on C2, and each system tabulates results in real-time by marking trades to market. Its user interface rates high for visual impact with clear and impressive performance graphics allowing instant comparison of many systems with an underlying chart of the S&P 500 cash.



Collective2: Showing comparative performance charts of some of the systems available

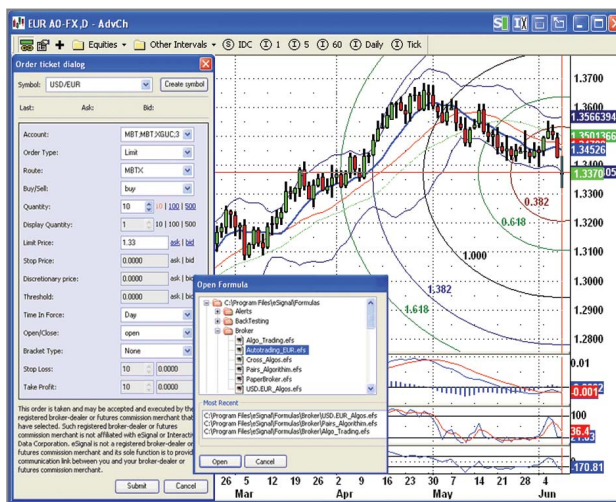
Though the signals from developers are routed via C2 and then onto the client for automatic or if preferred manual execution the option is also available for users to route automatically via a range of brokers directly to market. Developers can use Trade Station, Ninja Trader, and Meta Trader to send their signals automatically to C2, where the developer decides how much he wants to charge (if anything) and what delay factor is required in order to make results "public" to non-subscribers.

Though they are termed "systems", C2 signals could in fact be generated by a discretionary trader at the other end, rather than automatically by, for example Trade Station into C2. At the moment automated trading is available from C2 to bulldogfx.com, FXCM, Interactive Brokers and IFX. C2 and Strategy Runner are jointly working on a project to route C2 signals via SR which will then allow signals coming through C2 to execute additionally through other brokers including Gain Capital, GFT Forex, ODL Securities, ADM and Mann Financial, whilst combining the systems on C2 with those on SR on the same trading account.

eSignal
www.esignal.com

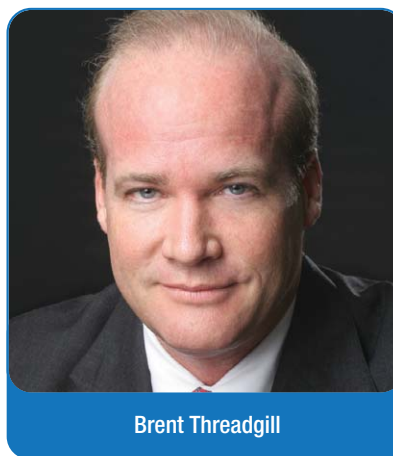
A little different is the approach offered by eSignal. This allows access to code from what are otherwise

readymade systems. It also allows users to mix their own systems with those offered free and other commercially offered by developers on the platform, creating a portfolio of systems which can be executed on a variety of FX platforms. The greater level of technical skill and involvement required also allows for a higher level of control.



eSignal: Advanced Chart, EFS formula library and order entry interface.

Users of the eSignal Advanced Charting platform have access to a library of trading strategies written in their bespoke EFS studies language, mainly from other users. This means that there is a library of what are essentially free strategies available for adoption to the timeframe and instrument of choice. Not as automated as SR or C2 this nevertheless allows for the fact that one still does not have to develop a new strategy from the ground up.



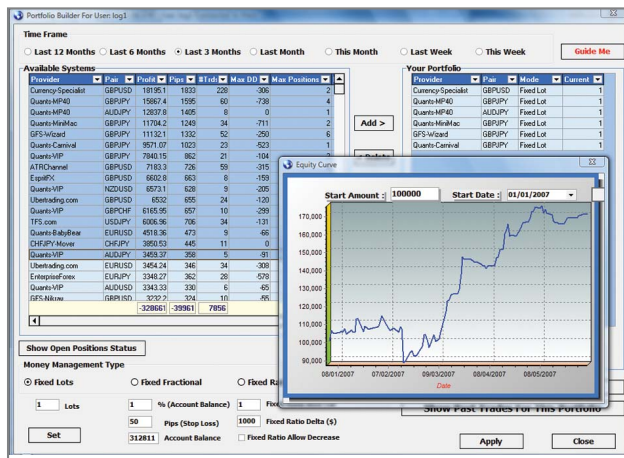
eSignal users have an active bulletin board that allows users to exchange views as well as swap or share code between them with the overview and programming help of one of the worlds most popular quote vendors.

Having decided on a strategy, auto execution is available via a range of brokers including Gain Capital, FXCM and Oanda. "We've got hundreds of folks using these FX interfaces, and we have free resources available online for individuals to help them develop their applications," according to eSignal's Brent Threadgill.



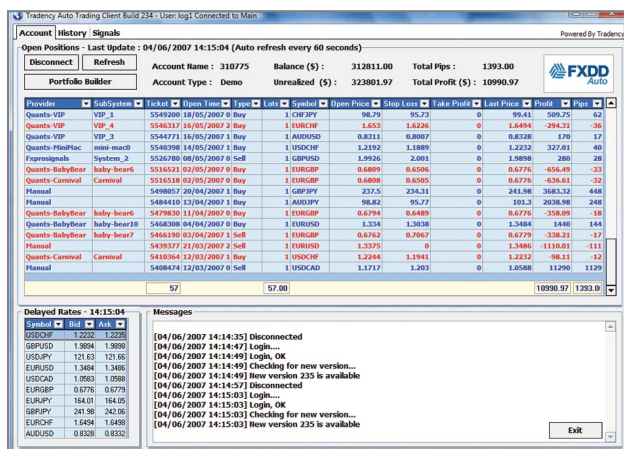
Tradency/FX Auto.com
www.fx-auto.com

From a portfolio of 400 systems, of which over 100 are profitable, this site allows users to look at a wide variety of profitable FX systems and trade them with just a few clicks through the FX division of Tradition S.A., one of Europe's most established inter dealer brokers. This is an easy to use all in one solution, which should appeal to those looking for a one stop shop.



Tradency's Power Builder application allowing combination portfolio equity curves built from user selected systems and proportions from actual results.

Equity curves can be calculated using real trade-tested data and each system can be viewed on a trade by trade basis. Minimum account size is just \$500 and there is no monthly charge for any one system as the user pays just one pip per round trade. Demo accounts are available for practice purposes.

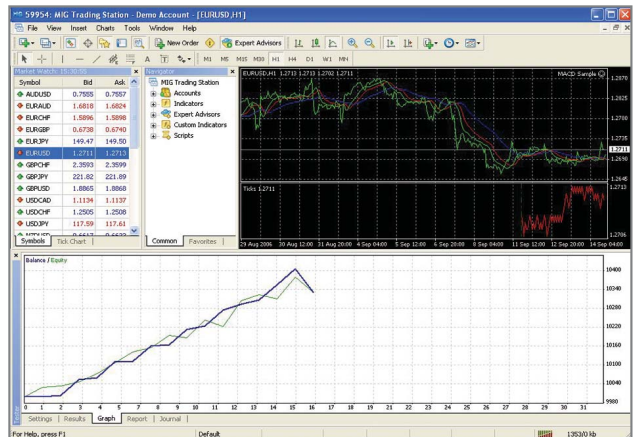


Tradency/FXDD Auto Trading Report Page

Greg Hay of Tradency suggests users log onto the FX-Auto.Com Forum at elitetrader.com for more comprehensive information and exchange of views.

MIG Investments
www.migfx.ch

MIG Investments is a fully regulated Swiss online broker that derives its quotes from AAA rated banks.



MetaTrader System Chart and System Equity Curve

They offer two pip spreads on five pairs and are an ideal partner for clients wishing to develop their own systems via the MetaTrader 4 platform. They also offer institutional spreads from 1 pip. MIG boast around 7 years plus of tick data for clients to use in their back testing. For live and funded accounts with deposits of a minimum \$100,000, expert programming assistance is provided free of charge. For standard accounts the programming is provided at a relatively small fee. MIG's Anna Serbinenko's estimates that around 50-65% of all trading at MIG is now at least partially automated, and estimates that this figure will grow to 85-90% in coming years. The minimum account size is US\$ 2000.

Interbank FX

www.interbankfx.com

Interbank FX is a fully registered US based FCM and NFA member, based in Salt Lake City, Utah. The brokerage offers a full function library of basic systems free of charge with the ability to write your own system and back test it, as well as running it forward in test mode via a demo account. The company offers mini lots so a client can start for as little as US\$ 250. The ability to trade is also provided on a mobile basis via Windows CE/Pocket PC and Palm OS devices.

BGC Partners

www.bgcpartners.com

BGC Partners L.P. is a leading inter-dealer broker providing integrated voice and electronic services to

wholesale market participants. With over 1600 staff and 14 offices worldwide, BGC Partners’ Margin FX business is set up to serve medium to larger retail and also institutional clients with demands for bespoke as well as industry standard solutions in the field of automated trading.

“We take individuals with a certain amount of experience,” says Steve Pryor, Director of Foreign Exchange at BGC Partners. “We have a diverse client base including second tier banks, funds, funds of funds, CTAs, corporates and high net worth individuals. We also offer several automated execution platforms and are strictly impartial as to the way clients interact with us. We deliver tools in the way the client requires.”



Steve Pryor

In addition to their own proprietary platform, BGC Partners offers Prime Brokerage to clients via MT4 (MetaTrader) and Trade Station integrated to BGC’s liquidity providers via Currenex –

creating one of the deepest liquidity pools in Forex. “I believe that our spreads and liquidity are tighter and deeper than any of our competitors,” says Pryor. “Our aim is to protect the spreads and liquidity by protecting our liquidity providers which is achieved by carefully screening the client base”.

Trade Station

www.tradestation.com

Trade Station first came out in the early 1990’s after its precursors, System Writer and System Writer Plus. It is now the longest established of the modern generation of automated system programming tools.

Trade Station is widely used, especially in the United States as many traders are comfortable with its so called “easy language” programming script. The sheer number

Weekly Analysis (Mark-To-Market):					
Period	Net Profit	% Gain	Profit Factor	# Trades	% Profitable
5/7/01	\$940.00	0.78%	2.77	6	50.00%
4/30/01	\$3,980.00	3.42%	3.20	15	53.33%
4/23/01	\$1,070.00	0.93%	1.40	10	40.00%
4/16/01	\$5,540.00	5.05%	13.31	10	30.00%
4/9/01	\$5,430.00	5.20%	6.60	7	57.14%
4/2/01	\$4,380.00	4.38%	4.50	12	58.33%

Weekly Rolling Period Analysis (Mark-To-Market):					
Period	Net Profit	% Gain	Profit Factor	# Trades	% Profitable
5/7/01	\$940.00	0.78%	2.77	6	50.00%
4/30/01-5/12/01	\$4,920.00	4.23%	3.10	21	52.38%
4/23/01-5/12/01	\$5,990.00	5.19%	2.20	31	48.39%
4/16/01-5/12/01	\$11,530.00	10.50%	3.12	40	45.00%
4/9/01-5/12/01	\$16,960.00	16.25%	3.64	47	46.81%

Sample Trade Station Weekly Testing Summary

of developers who have developed trading systems using this platform over the past 15 years ensures that this package will continue as the tool of choice for many. A range of programmers offer services in coding Trade Station strategies for those who are unable to program and test their own code, or need help.

However in recent years the appearance of inexpensive platforms such as Metatrader, eSignal with its comprehensive market coverage and server based solutions such as Strategy Runner, which offers very advanced C++ programming features has meant that Trade Station is no longer alone in offering solid solutions to automated traders.

MetaTrader
www.metaquotes.net

A large percentage of forex brokers offer MetaTrader software to their clients, according to MIG’s Anna Serbinenko. All three brokers mentioned above as well as Strategy Runner and C2 work with Meta Trader.

Op	Time	Type	Ticket	Lots	Price	SL / TP	Profit
66	2002.10.14 01:18	close	12	1	0.9869	0.0000 / 0.9840	-10.00
67	2002.10.16 09:49	sell	13	1	0.9813	0.0000 / 0.9743	
68	2002.10.17 02:01	close	13	1	0.9810	0.0000 / 0.9743	30.00
69	2002.10.18 15:02	sell	14	1	0.9721	0.0000 / 0.9651	
70	2002.10.18 19:16	close	14	1	0.9720	0.0000 / 0.9651	10.00
71	2002.10.21 04:03	buy	15	1	0.9717	0.0000 / 0.9787	
72	2002.10.21 07:15	modify	15	1	0.9737	0.9717 / 0.9787	
73	2002.10.21 07:16	modify	15	1	0.9738	0.9718 / 0.9787	
74	2002.10.21 08:15	close	15	1	0.9729	0.9718 / 0.9787	120.00
75	2002.10.25 14:31	buy	16	1	0.9778	0.0000 / 0.9848	

MetaTrader Expert Advisor Strategy Tester

Their MetaQuotes Language is a built-in language for programming trading strategies.

Custom Indicators, Scripts and Libraries of functions can be created. Some brokerages offer assistance in programming strategies while others offer ready to go libraries of basic technical strategies using the language. Users may download the software free from their site and many other forex broking sites for free.

“If its that good, why sell it?”

This is a question often asked by skeptical potential buyers about systems for sale.

A variety of answers are proffered, (the obvious) one being that clearly it’s a valid point - as amply demonstrated by the sub-standard actual results of many systems sold. However other systems have excellent results and there is clearly no one answer here.



Greg Hay

Greg Hay of Tradency notes that “People using their own systems on our platform are generating a dual revenue stream by making their systems available to others as well as being able to build up a portfolio of their

own system combined with others to create a smoother equity curve.”

What to look for in buying a system ...

When initially examining the performance record of a system, it often looks impressive, and until you do your homework on what goes into those supposedly great numbers, its best to check out some factors listed below:

1. Know your developer:

If possible, get to know who the system developer is, and as much about the systems available from this developer, past and present. Here are some issues to address:

- Do they look overly commercial (i.e. are you getting the hard sell?).
- How about after sales support? Do they answer the phone or is it email only?
- Are new versions being constantly released on re-optimized data? Are published results based on simulated, tested in real time or actually traded in the market account results, the latter clearly being better.
- If you are receiving signals from a remote server or source, who monitors that system? One fairly popular system FX systems developer with an excellent track record went on vacation, leaving the system running automatically. Signals were being automatically generated to many subscribers trading accounts The system crashed, leaving subscribers with substantial losses by the time the developer returned. So, whatever the case may be, keep an eye on your account. For example Tradency (<http://fx-auto.com/>) allows users who pick and choose from the library of systems to manually exit system generated trades.
- Are the system(s) on offer primarily developed for other instruments, like for example equities or other futures markets instead of FX? This need not necessarily count against the system (it can be an advantage if it works across a broader range of possible typical data patterns) but how comprehensively has the system been tested against the markets one intends to trade with the system.
- Even if the developer doesn’t give you any clue, try to ascertain from the signals what kinds of trades are being generated, so you have some idea of system approach and logic in order to fit the system into the overall portfolio of your systems.
- One revenue model offered at C2 for example, for certain systems is that nothing is charged if the system in question is not profitable in the market for the relevant billing period.

These questions can give vital clues as to the true intentions and efficacy of the systems provider.

2. Diversification is one of the oldest principles in the game of achieving a smooth equity curve and reducing overall systemic risk. When shopping from a library of systems it can be tempting to simply choose the best performers for example of the past few months but this will not necessarily give you the most diversified risk. The key is to choose profitable systems based on a variety of different currencies, approaches and time in the market. For example if you were to choose all trend following systems on dollar based currency pairs then you are effectively not diverse enough to protect yourself from a non trending phase, as they would perform similarly.
3. How many people are using the system on the market and who are they? More importantly what size are they dealing in? Everything has an effect to some extent on everything else, so the argument goes, but at what point does the system (or similar systems) start to affect the market to such an extent as to impair / change the intended operational dynamic of the system itself?

One of the great advantages about the size and diverse liquidity of the FX market is that this question should in general apply less than for example for a system operating on a stock index future or a specific stock.

However, given that larger institutions may be using signals from the same or similar systems without announcing the fact to you must be taken into consideration. Larger institutions will hardly be likely to announce to the fact that they may be using a retail system in their trading, and yet there is every reason to believe that this is happening. For example, if a system reaches its execution at price limit, particularly in a non major currency then there will clearly be a slippage factor directly attributable to the system being used due to the temporary effect of virtually instantaneous execution of one trade across multiple platforms on one signal around the world.



Developing your own system

If you have decided to take the step of developing your own automated trading system for FX trading there are a number of paths you could take in terms of programming. Popular platforms include free ones provided by a number of FX brokers for development and back testing, to other platforms such as eSignal, Trade Station and Strategy Runner, all have which are based on different revenue models.

General Questions: Automated Trading Systems:

1. Managing the Downside:

Managing drawdowns from equity peaks is almost as important as systems design itself. Monitor and prepare for drawdowns carefully: Most systems, and more often those with exceptional performance can have substantial drawdowns from time to time.

Investors are famous for being fickle and pulling out on a drawdown but as long as that drawdown is normal and the system recovers quickly then it's not a problem.

It's when the drawdown just keeps going that there is a real problem. The bigger the drawdown, the more that has to be made to get back to the starting point to go into positive territory.

For example, say an account starts with \$100,000 and has a 30% drawdown. Now the account stands at \$70,000. It has to appreciate by 42% to get back to its starting capital though. A drawdown of 35% has to appreciate by 50% to get back to 100%. A drawdown of 50% has to appreciate by 100% to get back to 100%.

Naturally, one wants to invest in systems that can limit their drawdowns to less than say 30%. Otherwise their profits really have to be spectacular to get back into the black. In certain cases it can be worthwhile, but the lesson learnt is to study the downside potential of a system as well as its upside.

2. Drawdowns will sometimes follow a pattern. If, for example a system has a drawdown of say, 20% every few months, it may be best to wait to enter the system after the next typical historical drawdown, especially if the system has not had a drawdown for some time. Others believe one should just enter a system as and when, but all too often users enter a system on a peak, the performance being impressive, rather than after a typical drawdown.

If a system exceeds its worst historical drawdown by a certain extent, then it may be worth looking at whether one wants to stay in the system or cut loose.

3. Has the system has been back tested on real time data (and the same source of real-time data) as

would actually be used. This is especially true in the FX market since different liquidity pools and brokers may offer different spreads.

Moreover, according to Interbank FX's Patrick Nouvion, the quality of the recorded data may not accurately reflect the way that data could have been applied to the trade in real-time.

4. To Back Test or not to Back Test?

Both Strategy Runner's Anna Becker and MIG Investment's Anna Serbinenko still see a role for back testing in ascertaining the overall performance metrics of a system across a broad range of data series - the argument being that the more robust a system the more varied the data it should test across whilst maintaining profitability in a wide variety of market conditions.

Most trading platforms reviewed here including Tradency, Strategy Runner and Collective2 do not allow back tested data to be used in the performance records offered.

Whilst the above may be stating the obvious for many systems developers, it is somewhat surprising how consistently basic principles of systems development are ignored in favor of fantastical results on paper. After all, as Greg Hay of Tradency notes, "back testing and over optimization is what got systems a bad name in the early days, and that is why we only stick with traded results"

Conclusion

For a relatively small investment it is now possible for the retail investor to start trading on a variety of platforms that allow for systems portfolios. This brings trading power that was once only available to a select number of quantitative research departments within banks and institutions right into the living room.

The availability of systems that have very acceptable performance records off the shelf at a low cost suggests that automated FX trading, whether it's of the homemade or pre-packaged variety or a mix of the two has a bright future.

