DUKASCOPY
Swiss Forex Bank & Marketplace

QUARTERLY REPORT

Q1, 2013

AGGREGATE TECHNICAL INDICATOR

FUNDAMENTAL ANALYSIS

TECHNICAL ANALYSIS

ECONOMIC RESEARCH

TRADE PATTERN IDEAS

EXPERT COMMENTARY

"The global economy still has serious problems - most notably the debt crisis in the euro zone… Austerity looks set to bite harder than we previously forecast"

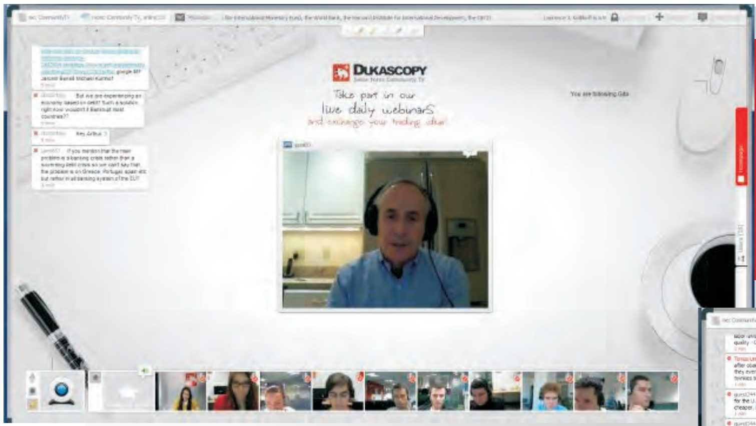
Economist Intelligence Unit

DUKASCOPY
Swiss Forex Community TV

Take part in our
live daily webinars
and exchange your trading ideas!

Another quarter has passed for Dukascopy Swiss Forex Community TV and what a quarter that was! Brilliant professors from the world's leading business schools discussed the most recent economic changes, Dukascopy community members exchanged their trading ideas and provided their forecasts for the most popular currency pairs. And we would like to share some of those highlights with you!

Q4 has brought fruitful cooperation with academia experts from some of the top business schools in the world.



Laurence Kotlikoff, Boston University, shares his insight on Limited Purpose Banking:

"If we had Limited Purpose banking in place back in 2005, we would not have any Eurozone debt crisis right now."

Webinar link

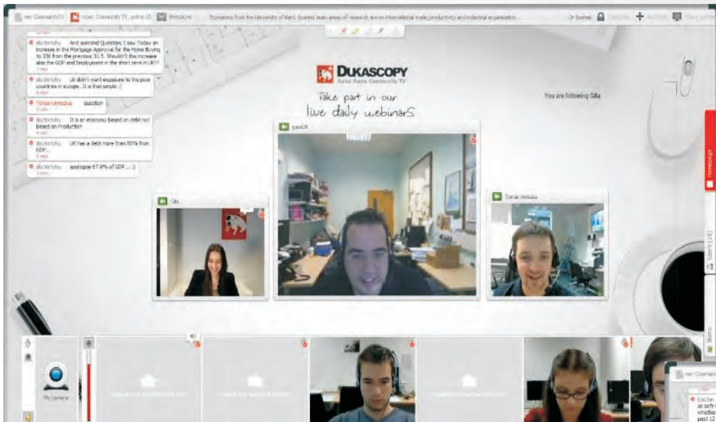
Mark Melatos, University of Sydney, discusses Asia's strongest players and their impact on the world economy:

"Remember that during the global financial crisis in 2008 China came to the rescue of the whole world by introducing a huge stimulus that was approximately 20% of their GDP."

Webinar link

Take part and exchange trading ideas!

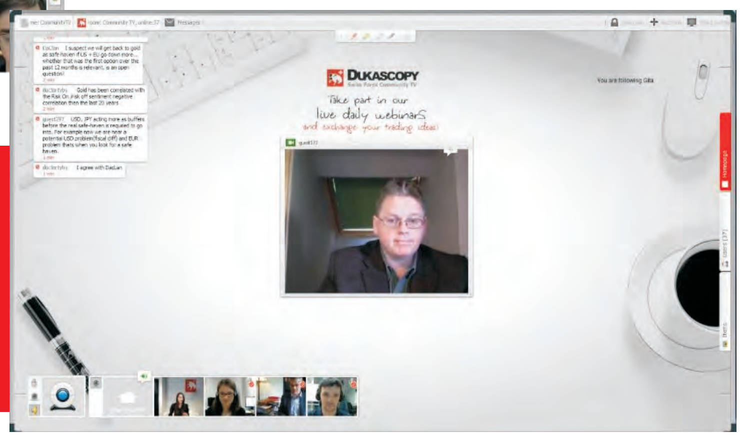
DUKASCOPY
Swiss Forex Community TV



Ioannis Bournakis, Middlesex University, analyses the UK's economy and how it is impacted by the EU & the Eurozone:

"The issue for the UK is that as long as the rest of the EU partners are in severe recession, it will be very difficult to say how the UK's economy will manage to go back to a sustainable economic growth."

Webinar link



Brian M. Lucey, Trinity College Dublin, has a look at "Precious Metals" with a focus on gold:

"Gold has a place in a portfolio. Consensus from dozens of research papers says that probably between 5-10% of the medium size and large investment portfolio would be usefully invested in gold."

Webinar link

As always, we hope to bring even more exciting webinars in 2013 to start the year with fresh ideas on the hottest topics. Here are some of the professors that are expected to join us for live webinars in the first quarter of 2013:

Ricardo Cabral, Centre of Competence for Social Sciences, University of Madeira, will discuss whether the Euro crisis was "made in the ECB?" on 14 January at 12:00 GMT.

Hendrik van den Berg, University of Nebraska, on 21 January at 14:00 GMT will broadcast a webinar and discuss the "American Economic Association Conference: Latest Views and Opinions".

Brian M. Lucey, Trinity College Dublin, is schedules to take part in another webinar on 24 January at 12:00 GMT to give a presentation on "Behavioural Finance".

Sankarshan Basu, Indian Institute of Management Bangalore, will appear as a special guest on 9 January for the Daily Webinar at 12:00 GMT.

Moreover, Dukascopy Swiss Forex Community TV is always striving to make the webinars more exciting and interactive. Thus, we invite you to broadcast your own webinars on interesting Forex related topics and earn 30 USD per hour on your live trading accounts! For more info simply visit www.dukascopy.com/tv/Live.

Dear traders,

First of all, we would like to congratulate you on finishing 2012 as well as wish you a prosperous 2013 full of new achievements and milestones.

As always, we are glad to offer you the new issue of our regular quarterly report, in which we aim to present all relevant to the foreign exchange market topics for the first quarter of 2013 and for the last quarter of 2012. The report covers fundamental and technical analyses, opinions from external experts, overview of the most notable trade patterns, aggregate technical indicator, as well as our latest research on statistical properties of currency pair returns.

On a similar subject, we encourage you to participate in interactive live daily Dukascopy TV webinars (www.dukascopy.com/tv/Live) to stay informed about the latest market developments from industry experts and forex traders. Additionally, we recommend you to try out FXSpider (www.dukascopy.com/fxspider/), a fully customizable streaming news and community chat tool now available in thirteen languages.

We hope that you will find the report useful and trust that it will provide you with the needed knowledge to bring you profitable trading as well as ensure that green pips accompany you throughout 2013!

Trade with Dukascopy Bank. Be informed.

Wishing you a prosperous quarter,

Alexander Suhobokov, CFA, FRM

Head of Research

Dukascopy Bank SA

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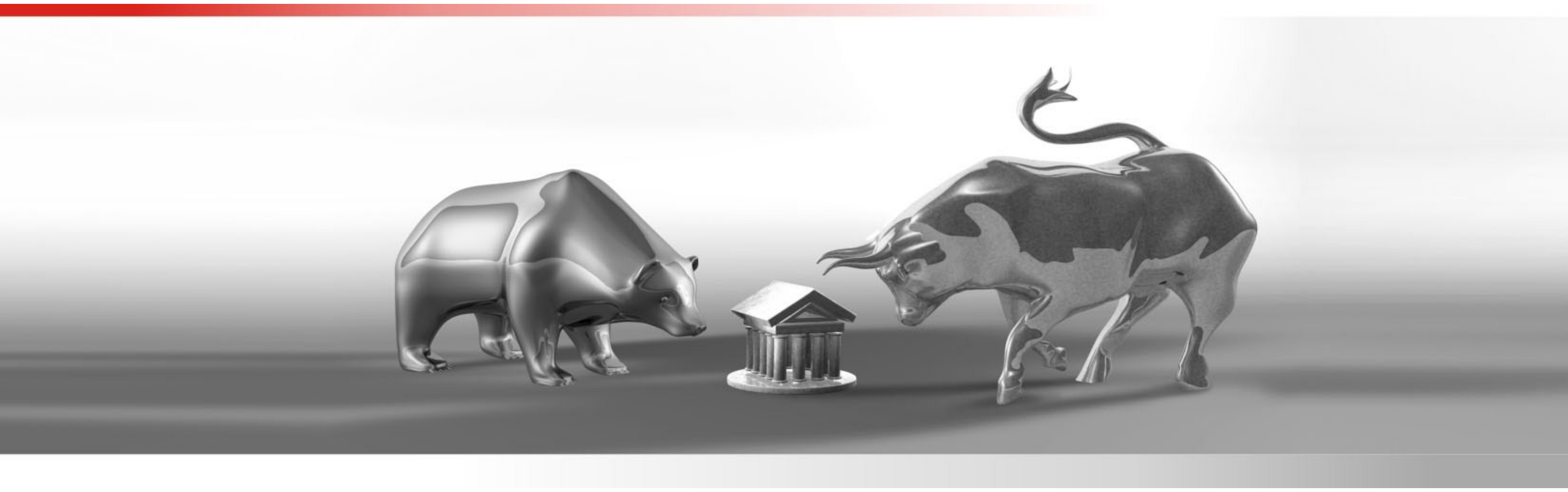


Fundamental Overview

Eurozone

Time is running out for European leaders to solve the deepening sovereign debt crisis, as the Eurozone economy slid into a double-dip recession in the third quarter. Gross domestic product shrank by 0.1% during the July-September period, after a 0.2% drop in the preceding quarter. Despite Mario Draghi's pledge to save the shared currency by any means necessary and all actions done by the ECB, the economic slump in the Eurozone is expected to continue further in early 2013.

Europe's two largest economies, - Germany and France, posted a modest 0.2% growth in the third quarter, adding to concerns that they may slip into recession in the final quarter. Smaller countries, like Portugal, Spain, Italy, Greece and Cyprus, however, saw their economies contracting in the third quarter. Eurozone GDP is widely expected to shrink in this year and in 2013 by 0.7% and 2.5%, respectively.

"Despite the easing in the rate of decline, the region still looks set for further contraction in the early months of 2013..."

- Chris Williamson, Markit's chief economist

In November, the unemployment rate in the Eurozone's 17 countries that have the Euro in circulation hit a new high of 11.8%, or 18.8 million. According to the Ernst and Young Eurozone forecast, this figure may even peak at 20 million in the next year, due to the muted growth and tough operating environment for businesses and politicians.

The activity in both the manufacturing and service sectors in the region ended this year in recession. A gauge of manufacturing activity fell in December to 46.1 from 46.2 in the previous month, while the services Final Purchasing Manager's Index stood at 47.8, unchanged from the prior month. The data are indicating weak domestic demand and growing uncertainty, as companies are showing reluctance to increase their spending.

Eurozone finance ministers agreed to put the European Central Bank in charge of all lenders in the region, marking the first bold action to tackle the problems together. The ECB will be in charge of around 200 banks and will act as a chief supervisor of Eurozone banks. After a year of problems, which can be considered as a lack of management, with Greece facing the risk of leaving the Euro, an agreement on the first stage of a banking union made at the last summit of 2012, is a bold step towards pooling sovereignty. The supervision will be ready by March 1, 2014, so banks around the Eurozone will be able to receive direct aid from the 500 billion-euro European Stability Mechanism by making the unanimous request. "With the ECB's unconventional measures, we have been able to steady the course... We have gained precious time, but this is not infinite", Draghi said in a speech in Milan.

USA

Barack Obama has been elected to a second term as the President of the United States, defeating Governor Mitt Romney by roughly one per cent. "We know in our hearts that for the United States of America the best is yet to come," said Obama soon after the victory. The new president of the world's largest economy is facing many crucial problems, including the so-called "fiscal cliff", which, if it is not solved, will push the U.S. into another recession in 2013.

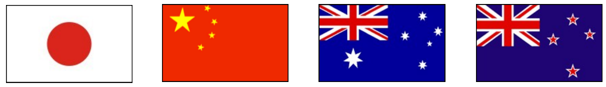
In the beginning of the new year, President Barack Obama and Congress reached a compromise that stopped the U.S. from going over the "fiscal cliff". The deal includes a tax increase for people with income over $400,000 for individuals and $450,000 for couples, figures which are significantly higher, than those, which President Barack Obama had claimed during his election campaign. For people with bigger incomes, taxes will rise to a maximum of 39.6%, from an existing 35%. This deal would also increase taxes on property which exceeds $5 million to 40%. Despite the solution, other important problems are needed to be solved. In 2011, federal spending soared to 24.1%, from 20.1% in 2006.

> *"We know in our hearts that for the United States of America the best is yet to come"*
>
> *- Barack Obama*

Gross domestic product, which is a measure of overall economic health, in the world's biggest economy expanded by 3.1% in the July-September period, up from previous estimates of 2.7% and 2%. Employment rose by 155,000 in December, while private payrolls growth stood at 168,000 jobs. It is widely expected, that monthly employment will reach 200,000 by the middle of 2013, while the unemployment rate, which now stands at 7.8%, will stay on a downward trend. The latest minutes from the Fed indicate that quantitative easing is likely to come to an end this year in the case that the economy will develop, while the labour market will "improve substantially and sustainably".

Technically, the period of recovery ended in late 2011 when economic output, adjusted for inflation, returned to its prerecession peak. However, stronger-than-expected GDP growth and the modest improvement in the labour market are diminishing the risk of another recession.

Asia & Pacific



The Chinese economy decelerated in the third quarter of 2012, while Japan has fallen into recession, adding to concerns that the global slowdown weighed on Asian countries. The world's second largest economy expanded by 7.4% in the third quarter, missing the official target for the first time since the first quarter of 2009. Gross domestic product in Japan, the world's third largest economy, shrank by an annualised 3.5% in the three months through September, or by 0.9% from the previous quarter, meaning that Japan is technically in recession, after contracting for two consecutive quarters.

Not only the deepening Eurozone debt crisis and concerns about the so-called "fiscal cliff" in the U.S. were the reasons for such a weak performance of Asian countries. Growing tensions between China and Japan over the uninhabited islets hit the countries' imports and exports, which negatively affected both economies. However, Japanese new Prime Minister Shinzo Abe, who won with his Liberal Democratic Party between 300 and 320 seats in the 480-member parliament, claimed his readiness to boost the flagging Japanese economy by any means necessary, saying it is important not only to Japan but to nearby China and to the United States as well.

"China alone will probably have the largest economy, surpassing that of the United States a few years before 2030"

- National Intelligence Council

Soon after the elections, Abe called for more stimulus measures and unlimited monetary easing. He also said the Bank of Japan should double its inflation target to the 2% level and ease policy to beat deflation, and has threatened to revise a law guaranteeing the BoJ's independence, in case it refuses to set a 2% inflation target. The Japanese government is expected to announce around 12 trillion yen ($136 billion) in fiscal stimulus measures and will take the unprecedented step and buy the nation's factories and machinery directly with taxpayer funds.

Bold actions by Japanese new government and other politicians in the Asian region should provide a boost to the economies to sustain growth. The Japanese government forecasts economic expansion of 2.2% in the next fiscal year. In November, industrial output in China, which is a key measure of China's growth, rose to 10.9% from a year earlier, suggesting 8% GDP growth in 2013. "Asia will have surpassed North America and Europe combined in terms of global power, based upon GDP, population size, military spending, and technological investment. China alone will probably have the largest economy, surpassing that of the United States a few years before 2030," The National Intelligence Council's Global Trends Report.

Technical Overview

EUR/USD

Daily Chart

100-day SMA 200-day SMA

2012 Q4 Summary

An initially weak recovery early in Q4 had put into question the currency pair's ability to advance further. As it turned out, these fears were well-grounded and eventually materialised, when EUR/USD precipitously declined during a 20-day period that was initiated on Oct 18. This four-figure dip was only halted at 1.27, which was previously estimated to be the lower edge of the main support area that secured validity of the bullish outlook. Onwards, we saw strong bullish momentum that could not have been stopped even by a notable resistance level at 1.3123 that has proven to be of great importance to the market throughout the recent years, but nevertheless had to fall victim to substantially improved sentiment in the market.

2013 Q1 Outlook

History has also shown the veracity of our assumption concerning similarities that we drew between the price action during two intervals: from June to October in 2010 and from July to December in 2012. We assume this confirmation could give us a better understanding as to where the pair is headed now and what is the most probable outcome of the first quarter of 2013. Looking at the current situation from this perspective encourages us to believe the single European currency is set to appreciate further, even though lately we have observed a pull-back from a high of 1.3188. The rising support line in conjunction with the 100-day SMA is expected to guide the currency pair towards 1.3486 (2012 high), which is deemed to be the key to a continuation of a bullish run up to 1.4283, though this is already a question of a longer time horizon and is likely to be discussed in the second part of 2013 if our projections hold true. In the meantime, if the pair does falter in the course of time, 1.27 is to become the line in the sand. A breach of this mark, in turn, could potentially trigger a sell-off down to a 1.20-1.19 region, whereas a deeper dip is considered to be highly unlikely.

GBP/USD

Daily Chart

100-day SMA 200-day SMA

2012 Q4 Summary

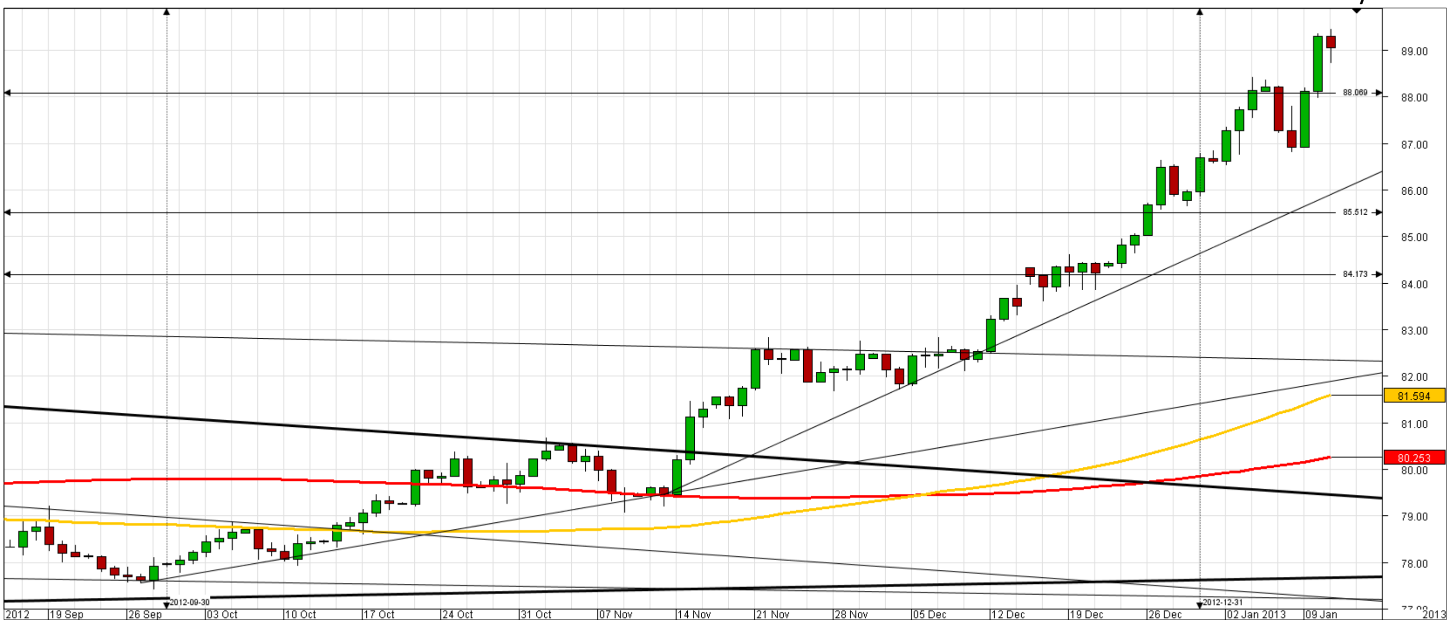
At first the Cable proceeded according to the scenario we found most likely to unfold a quarter ago, i.e. a gradual decline away from the bearish resistance line. We also did notice that 1.5850/00 would become a hindrance on its way to the lower edge (1.55) of the triangle pattern the currency pair has been fluctuating within at least since the beginning of 2009. As it is apparent now, the strength of this support zone, which consisted of a rising trend-line and the 200-day SMA, was underestimated. Not only did it nullify the bearish impetus, but subsequently managed to send the price to 1.6310 (15-month high), from where the pair underwent a bearish correction, suggesting appreciation may have already petered out.

2013 Q1 Outlook

Our outlook on GBP/USD has gone from neutral to positive, as we view this pair to be inseparable from EUR/USD - their charts bear a striking resemblance if we scroll back in time. This affinity, however, was not observed far in the past and is mainly attributed to the last two quarters of 2012 and could be expected to manifest itself in the upcoming months as well. For a comparison, the correlation between EUR/USD and GBP/USD in the first part of the past year was 0.6, but grew to 0.9 in the second half. Therefore, we would strongly advise to consult the EUR/USD chart prior to making any decisions relating to the Cable, as proximity of resistance in the former is likely to have a notable effect on the latter and slow down the pace of appreciation or completely negate its rally. Turning to a current situation in the pair, the main events are to revolve around a pivotal level of 1.6310 (analogue of 1.35 in EUR/USD), and selling pressure has denied several attempts of bulls to push the price upwards this year. Nevertheless, the bullish support line, which may be drawn from the very beginning of 2009 (Jan 23 low) should prove to be of primary importance to traders due to its seniority and force the price to overcome 1.63 in the end.

USD/JPY

Daily Chart



100-day SMA 200-day SMA

2012 Q4 Summary

At first a rebound of the price from the upward-sloping support line appeared shallow, being that a declining resistance trend-line decreased the incentive to dive into buying the U.S. Dollar, as the risk of a pull-back was considered to be rather high. This was the case when USD/JPY reached 80.60 and afterwards plunged down to 79.40 in an instant, but was held there until bullish market participants regained their strength, leading to a violation of 80 and a corresponding exposure of higher levels, namely 82.60 (falling trend-line since Apr 6, 2011), 84.20 (2012 high) and 85.50 (27-month high), which has also collapsed under buying pressure recently.

2013 Q1 Outlook

The behaviour of USD/JPY during the last quarter of the past year is in many ways comparable to a bullish performance of the pair in early 2012 and could imply a reversal soon, something that has happened on Mar 21, when the price was slowly dragged downwards from 84.13 until a low of 77.14 (Sep 13) was met, being one of the points on an upward sloping support line that also goes through a low of 75.57 (Oct 31, 2011). Of note, there is an important difference that biases us towards a belief this might not be the actual case now. In an earlier example there was an overpowering resistance (84.13) represented by a three-year trend-line, while on a more recent occasion USD/JPY had only a few doubts near this level. Moreover, a total absence of overhead obstacles of similar durability nearby adds to the argument that there are no reasons for a drop. Thereby we are not inclined to see 88 as a cap for the price in the future. According to our estimations, the pair preserves the potential to get a foothold above it and aim for 90, though we do reckon that an accelerated up-trend is fragile and a less sloped line will be more reliable, especially if a bearish correction, either from the current levels or from 90, turns out to be protracted.

USD/CHF

Daily Chart

100-day SMA 200-day SMA

2012 Q4 Summary

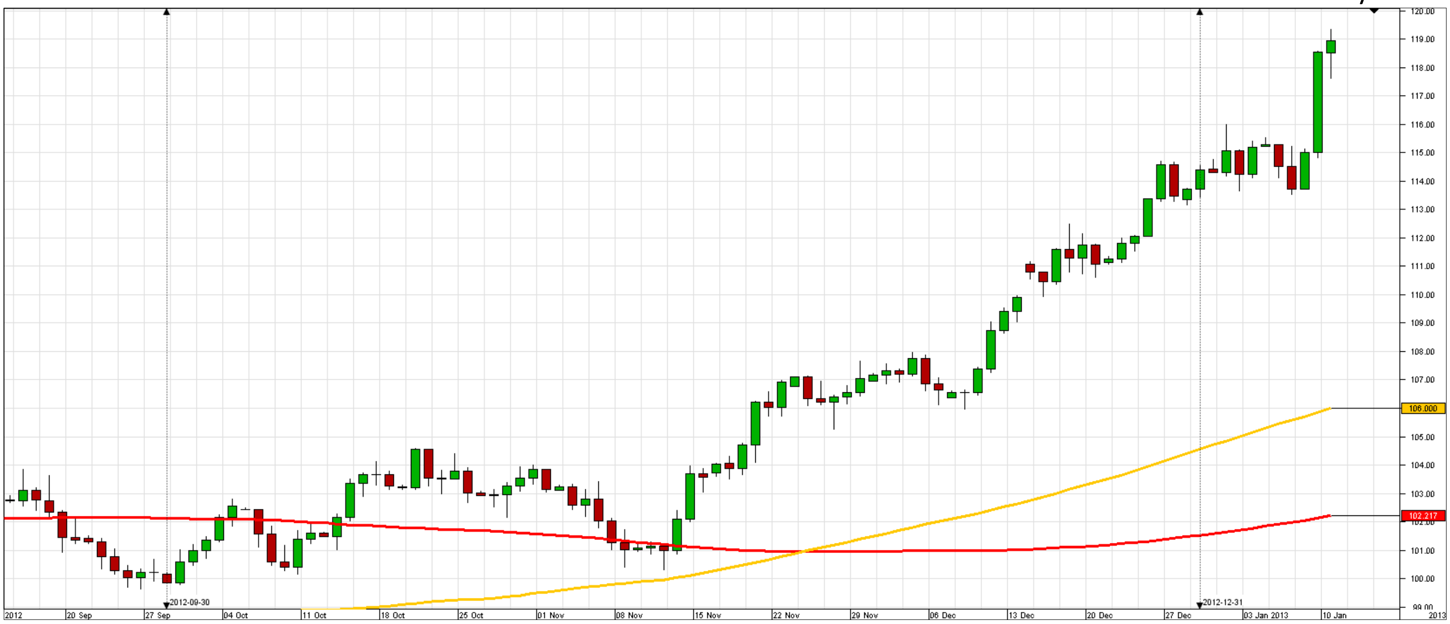
Throughout the last quarter the price had been mainly fluctuating between the declining trend-line and the 100-day SMA, demonstrating commitment to a bearish tendency rather than to a bullish one, which was anticipated to emerge before the end of 2012, but failed to do so, invalidating bullish prospects. The rising support was largely ignored and had a muted effect on the activity of traders, as it appears to have already lost its topicality, since the price has escaped the boundaries of the bullish channel it had stayed within since September of 2011. USD/CHF also continued to post lower peaks and lower valleys, confirming formation of a falling wedge pattern, the apex of which is located in mid-March.

2013 Q1 Outlook

It took the pair two months, but is has nevertheless eroded the major up-trend that was keeping the bullish outlook intact, hence the downside risk is increased, though the pair is in no hurry to fall down to 0.8930 and is measuredly approaching it, with up and down legs being nearly equal in size. While the pair is viewed to be poised for additional losses, we should be wary of bullish signals that have a high probability of appearing in March. This should be the time when the pattern may define itself as a reversal set-up, which will be the case as soon as the line that connects maxima attained on Jul 24, Nov 13, and Dec 7 is violated along with the 100-day SMA. Such course of events could lift the price to 0.9470, a confluence of the 200-day SMA and trend-lines. Additionally, proximity of 0.8930 (2012 low) impedes appreciation of the Swiss Franc relative to the U.S. Dollar, but beneath 0.8930 the currency couple will not encounter supports of great importance en route to 0.8568 (15-month low) and thus should move at an accelerated pace.

EUR/JPY

Daily Chart



100-day SMA 200-day SMA

2012 Q4 Summary

For almost half of the quarter the pair was somewhat range bound between 99.75 and 104.5. A breach of the latter level put the pair in a three week erratic state after which a bullish rally erupted. It led to the highlight of the quarter—on the 27th of December the pair reached the highest level since mid summer of 2011 (114.68). This event was followed by a minor bearish correction and at the moment the pair is calmly hovering around 113.5

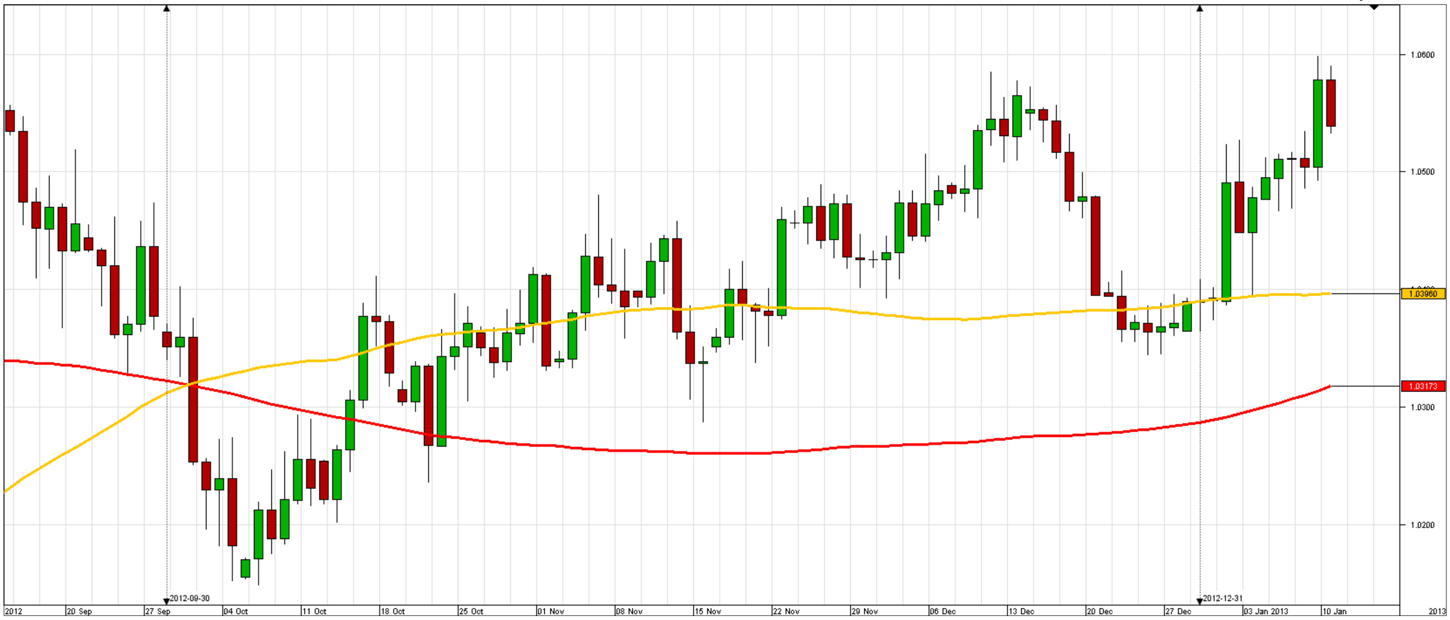
2013 Q1 Outlook

"...the pair should remain somewhere in the 115 JPY area in the beginning of the year"

With the help of the momentum and psychological/ major levels at 110 JPY and 112 JPY the pair should remain somewhere in the 115 JPY area in the beginning of the year. An advance as high as 120 JPY is rather unlikely, however, it still should remain as a possibility. Somewhere at the end of January and the beginning of February bulls should step back significantly as the pair will be rather far away from the 200 and 100-day SMAs, which should give strong indications of the euro being overbought versus its Asian counterpart. Such a scenario is supported by current market sentiment and expected by major market participants. There is only mildly fewer bulls in the market at the moment and major market participants put their predictions in the 113-110 JPY area with a median of 110 JPY.

AUD/USD

Daily Chart



100-day SMA 200-day SMA

2012 Q4 Summary

The pair started the quarter with a 250 pip dip from 1.040 to 1.015 a majority of which took place in the second half of October. After this there were ups and downs, but the general trend was upward sloping, with some indications of channel formation which, however, did not form. This long process, which lasted slightly more than 10 trading weeks led to the pair peaking to 1.0585 on 12th of December. The pair managed to remain above 1.05 for a full trading week but in the course of the next trading week was pulled back below 1.04; that's where the 200-day SMA is keeping pressure on the pair at the moment.

2013 Q1 Outlook

"Technical indicators suggest that the start of the quarter should be marked by another rally of the Aussie"

Technical indicators suggest that the start of the quarter should be marked by another rally of the Aussie which might last for quite some time as monthly technicals give same readings. A significant role in this should be played by the recent high (12th of December) at 1.0585 and, if the pair advances further, by the summer and autumn highs at 1.0612 and 1.0624 respectively. However, expectations of major market participants seem to be in a completely different spectrum. They put their expectations in the 1.05-1.02 range with the mean at 1.04. At the moment. the 100 day and 200-day SMAs can be found in this area, at 1.04 and 1.03 respectively. It might be that lately, when the market is experiencing quite a few informational shocks, these values started to be taken in to account when pairs are considered being overbought or oversold.

USD/CAD

Daily Chart

100-day SMA 200-day SMA

2012 Q4 Summary

Pair started the quarter with a 150 pip dip from 0.988 to 0.973, which led to a slightly erratic rally as the pair breached the parity condition. At first, the strength of the greenback versus the Loonie did not convince market participants as they dragged the pair down below the 99 cent mark. After this, another rally, which put the pair above the parity condition for a much longer time, erupted. However, once again this was perceived as speculations and in the course of the next four trading weeks the pair fell to 0.985. The last three trading weeks pushed the pair to 0.995 as it might be preparing for another attempt to storm the parity condition.

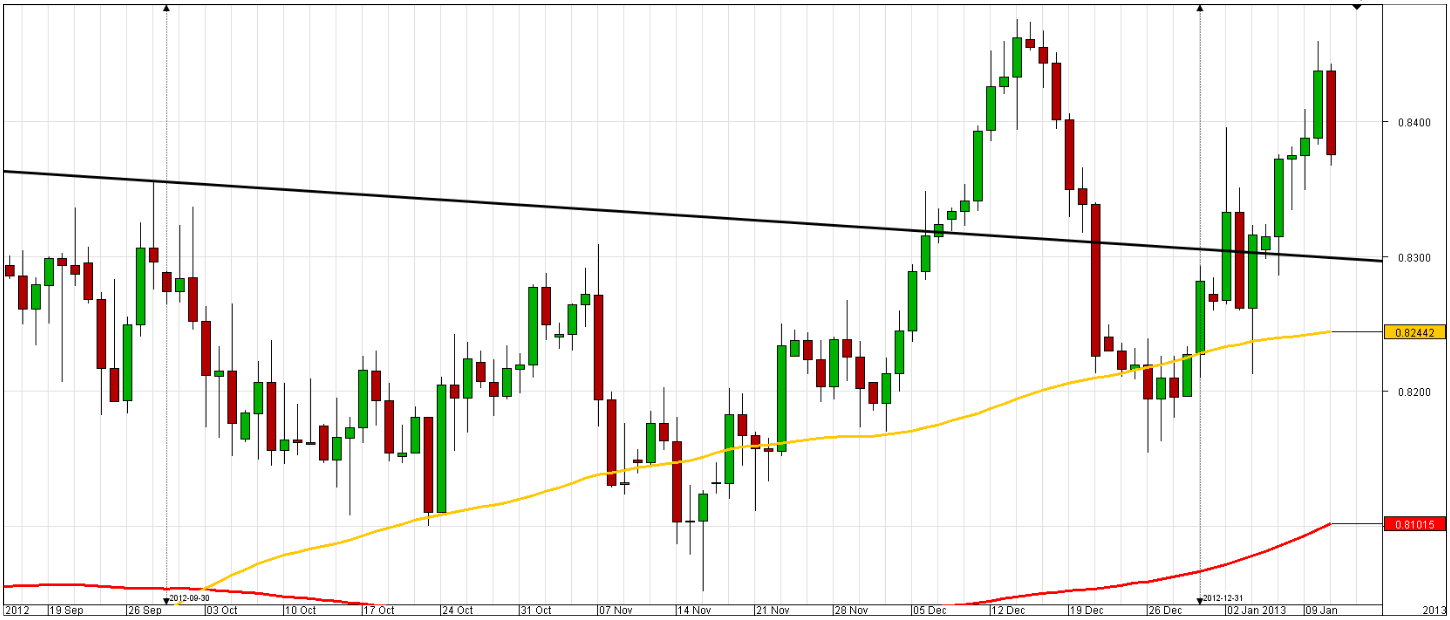
2013 Q1 Outlook

"The mid-December low at 0.9824 should provide enough support"

The pair's outlook is rather grim—short and long term technical indicators point at depreciation of the pair. At the same time, major market participants put their expectations in a rather wide, 0.98—1, area, but a lot of attention should be paid to the fact that more than half of them put their money on the 0.98 value. It does not seem that market reaction could be this extreme, at least in the first weeks. The mid-December low at 0.9824 should provide enough support, at least for the medium term. Also, the relatively close presence of the parity condition could look attractive for bulls to start buying heavily with an expectation that the pair will gain momentum, and if the parity condition will be breached it will become a strong support for the pair. However, it is much more likely that such events will conclude with peaks in the 0.995 area and pull back to earlier levels.

NZD/USD

Daily Chart



100-day SMA 200-day SMA

2012 Q4 Summary

For the fair majority of the last quarter the pair has been deviating between 0.81 and the triangle pattern's resistance (connecting 29th of January and 28th of September highs). On the 3rd of December the pair received bullish impetus form the 200-day SMA which led to a rally which allowed the pair to breach the pattern's resistance and put the pair well above the 84 cent mark. However, as rather often happens with triangle patterns, the pair was pulled back in the boundaries of the pattern and for the past week or so the pair has been trading around the 200-day SMA.

2013 Q1 Outlook

> *"There is quite a few indications that that the pair should rally once more"*

There is quite a few indications that that the pair should rally once more. First of all, the medium and long term technicals. Quite a few individual indicators still give neutral a outlook, but the aggregate signal is rather clear. Second, a recent attempt to the breach pattern's resistance and a pullback after it. The pattern in mind is a major triangle pattern whose resistance is seen in the graph (thick black line). In around 75% of the cases, the pair eventually breaches the pattern's supports/ resistance depending on where the pullback occurred. Third, a very plausible formation of a double top pattern. The first top would be the 14th of December peak to 0.8475. However, there are very few cases when the kiwi breached 0.84 and it seems that this important historical fact puts some doubts in the minds of major market participants as a majority of them put their predictions around the 0.82 cent area. All in all, the start of the quarter, maybe the whole first month, should be marked with a rally to 0.845. After that we might see another pullback (possible double top pattern) back below 0.83.

Expert Commentary

For this Quarterly Report we interviewed four experts from Danske Bank, Nomura, Barclays Bank Plc and National Australia Bank to find out their opinion on the following questions: what key economic events trigger the movement of the major pairs in Q1, what is the anticipated trend as well as what are the forecasts for the respective currency pairs?

AUD/USD, NZD/USD

Ray Attrill
Co-Head of FX Strategy
National Australia Bank, Australia

I think the main risks probably come from the U.S. Dollar side. If we avoid the US fiscal cliff on December 31 and the Fed starts to accelerate its balance sheet expansion, then the risk is that it is going to keep the U.S. dollar weak in the first half of 2013. If so, that is going to provide a direct support to the Australian and New Zealand Dollars. Thus, if we are going to see some weakness in those two currencies it is probably not going to come until later in the year because the U.S. Dollar will keep them both relatively strong.

We might see a little bit of weakness in the Australian and New Zealand Dollars, they both look a little bit overvalued relative to some of the key fundamental drivers that we have historically used to judge the appropriate levels for the Aussie and kiwi Dollars, interest rates, commodity prices, risk appetite etc. Obviously these currencies have remained stubbornly strong through 2012, so it is not obvious that we will see any significant adjustment taking place in the early part of the year.

We think that the Australian Dollar will remain above parity certainly through the first quarter of the year. Thus, we forecast it at around 1.01 at the end of the first quarter and maybe down to around parity in the early part of the third quarter of the next year at the earliest.

As concerns to the New Zealand Dollar, similarly we think it will probably remain relatively strong near the current levels of 0.835. It could even get back up towards 0.85, and may only come a little bit lower later in the year. Thus, for the first quarter of next year the forecast for the kiwi is down at 0.81-0.82 and maybe only coming below 0.80 in the middle of second half of 2013.

EUR/USD

Kasper Kirkegaard
Senior FX Strategist
Danske Bank, Denmark

The key driver for EUR/USD will be relative monetary policy. The Federal Reserve has now promised to purchase $85 billion worth of assets each month. That is a very significant expansion of the Federal Reserve's balance sheet, and that means much more easing than currently implemented by the European Central Bank. Thus, relative monetary policy is an argument for a weaker Dollar in the first quarter of the next year.

The second key driver is the European risk premium. The Euro remains very sensitive to movements in European government bond spreads. Considering current correlations, 100-basis points in the 10-year Italy's, Spain's spread against Germany means roughly the 4.5 big figures in the EUR/USD. Hence, if we see further performance in the peripheral European countries, and we see good reasons for that, it would also support the Euro.

Overall, we doubt that there will be a strong trend in EUR/USD next year. Usually we see strong trends in the EUR/USD when there is either a global recession, a global recovery or if the Fed and the ECB conduct opposite monetary policies. We doubt we will see any of that next year. Thus, the key point is that there is a little chance of a big trend, but given the fairly range-trading market we expect a move higher in EUR/USD in Q1.

For the end of Q1 our forecast for EUR/USD is 1.34, and then we see a slight potential beyond that going to Q2.

GBP/USD

Geoffrey Kendrick
Head of European FX Strategy
Nomura, UK

On the U.S. side the main current issue is the 'fiscal cliff' and whether or not that is solved. My view is that if it is solved, it is probably marginally Dollar positive. I think it is most probable that it will be solved in the next few weeks.

On the U.K. side there is much less exciting things going on in the first quarter of 2013. I suspect there will be a good buying of gilts by non-residents, which is marginally supportive of the currency. However, probably the U.S. story dominates slightly.

Our forecast for GBP/USD in Q1 is 1.62, thus we are expecting the pair to move up and then back down again slightly. Hence, for the GBP/ USD pair we are anticipating a sideways trend.

USD/CHF, EUR/CHF

Geoffrey Kendrick
Head of European FX Strategy
Nomura, UK

The EUR/CHF is just stuck above the Swiss National Bank's floor, and I do not see that changing at any stage; the currency pair is afraid to move to the top side. There should be a structural improvement in the Eurozone performance, which would then result in less demand from non-Swiss residents to hold cash in Swiss Francs. Moreover, potentially you would also need to see the Swiss banks in slightly better shape such as levering up and borrowing in Swiss and creating assets outside of Switzerland. Both of those I think are quite unlikely, thus I forecast the EUR/CHF to be stuck in this very tight range just above 1.20.

Our estimate for USD/CHF is 0.96.

USD/JPY, EUR/JPY

Masafumi Yamamoto
Chief Currency Strategist
Barclays Bank Plc, Japan

One of the key events in the first quarter of 2013 will be the BOJ monetary policy meeting on 24 January, to review its inflation goal currently set at 1%. Moreover, we expect an appointment of a successor to the Governor and two deputies at the BOJ. In addition to that, there will be a supplementary budget formation, which may trigger a sovereign downgrade.

On the U.S. side we expect the "fiscal cliff" negotiations to be continued into January but likely to be settled during Q1.

Meanwhile, Spain is likely to formally request the EU aid, triggering the Outright Monetary Transactions by the ECB to push down Spanish yields further. Furthermore, there will be a Italian general election on 24 February, which will shed light on whether or not necessary reform will be implemented under new administration.

We expect to see a higher USD/JPY on the back of negative factors on the JPY. Meanwhile, EUR/JPY may show a temporary rise due to the ECB's OMT, but it should eventually shift market attention back to weak Eurozone fundamentals and the likelihood of the ECB rate cut, then EUR/JPY should retreat.

Our forecast for USD/JPY is 88, while for EUR/JPY - 114.

Trade Pattern Ideas

EUR/USD

Daily Chart

200-day SMA

EUR/USD

Rising Wedge

"Technical indicators give rather strong negative outlook of the pair on one-month horizon"

EUR/USD has formed a Rising Wedge pattern on the one-day chart. The pattern has 57% quality and 87% magnitude in the 160-bar period.

The pattern started on the 17th of June, 2012, when the pair peaked to 1.2748; currently it is trading at 1.3265; the gap between the pattern's support and resistance narrows by 480 pips in 100 bar period. Trading volume is decreasing in the length of the pattern. Technical indicators on aggregate point at appreciation of the pair on one-week horizon suggesting it has the propensity to breach the pattern's resistance. Long traders could focus on the cluster of resistance levels at 1.3308/378 (recent high, Bollinger band, pattern's resistance and monthly pivot (R1)), major level at 1.3500 and monthly pivot (R2) at 1.3559.

Technical indicators give rather strong negative outlook of the pair on one-month horizon suggesting we might see a rebound from pattern's resistance or a pullback if it will be breached. The market has significant bearish tendencies as 65% of traders have sold the single currency versus the greenback and 56% of all pending orders on the pair are to go short. Short traders could focus on the 20-day SMA at 1.3172, monthly pivot (PP) at 1.3128, cluster of support levels at 1.3025/1.2947 (Bollinger band, pattern's support, major level, recent low, 100-day SMA and monthly pivot (S1)), December low at 1.2877 and 200-day SMA at 1.2731.

USD/CAD

Daily Chart

200-day SMA

AUD/NZD

Triangle

"Although short and medium term technical indicators lack conclusive readings, long term indicators point at depreciation of the pair"

AUD/NZD has formed a Triangle pattern on the one-day chart. The pattern has 87% quality and 100% magnitude in the 133-bar period.

The pattern started on the 25th of July, 2012, when the pair dipped to 1.2373; currently it is trading at the monthly pivot (PP) at 1.2580; the pattern's support and resistance are set to intersect on 18th of February, 2013 at 1.2528. Trading volume is decreasing in the length of the pattern. Both currencies are the most sold major currencies across the board, but current market sentiment is strongly bullish as the traders have bought aussie versus the kiwi in 74% of cases. Long traders could focus on the 20-day SMA at 1.2599, pattern's resistance at 1.2639, recent high/Bollinger band at 1.2678/701, monthly pivot (R1) at 1.2707 and 200-day SMA at 1.2739.

Although short and medium term technical indicators lack conclusive readings, long term indicators point at depreciation of the pair suggesting that recent rebound from pattern's resistance gives clear indications for further development of the pair. Short traders could focus on the cluster of support levels at 1.2520/500 (Bollinger band/ major level and pattern's support), recent low at 1.2474 and monthly pivot (S1) 1.2430.

GBP/USD

Daily Chart

200-day SMA

GBP/USD

Ascending Triangle

"Despite the recent bounce from pattern's support markets participants are strongly bearish towards the pair"

GBP/USD has formed an Ascending Triangle pattern on the one-day chart. The pattern has 81% quality and 77% magnitude in the 264-bar period.

The pattern started on the 13th of January, 2012, when the pair dipped to 1.5234; currently it is trading at 1.6136; the pattern's resistance is at 1.6306 and is set to intersect with the pattern's support on 5th of April, 2013. Trading volume has been decreasing in the recent weeks after a slight increase in the summer of 2012. Although quite a few technical indicators give neutral signals aggregate signal suggests pair will breach the pattern upwards. Long traders could focus on the 20-day SMA/monthly pivot (PP) at 1.6145/55, Bollinger band/monthly pivot (R1)/pattern's resistance at 1.6282/306, recent high (2nd of January) at 1.6389 and monthly pivot (R2) at 1.6534.

Despite the recent bounce from pattern's support markets participants are strongly bearish towards the pair as 64% of them have sold the Cable versus its North American counterpart. Short traders could focus on the 100-day SMA at 1.6081, pattern's support/Bollinger band/recent low at 1.6023/1.5993, monthly pivot (S1) at 1.5922 and 200-day SMA at 1.5881.

EUR/GBP

Weekly Chart

200-week SMA

EUR/GBP

Channel Down

"Although both currencies are some of the most sold major currencies across the board, traders perceive the euro as the stronger one"

EUR/GBP has formed a Channel Down pattern on the one-week chart. The pattern has 61% quality and 50% magnitude in the 145-bar period.

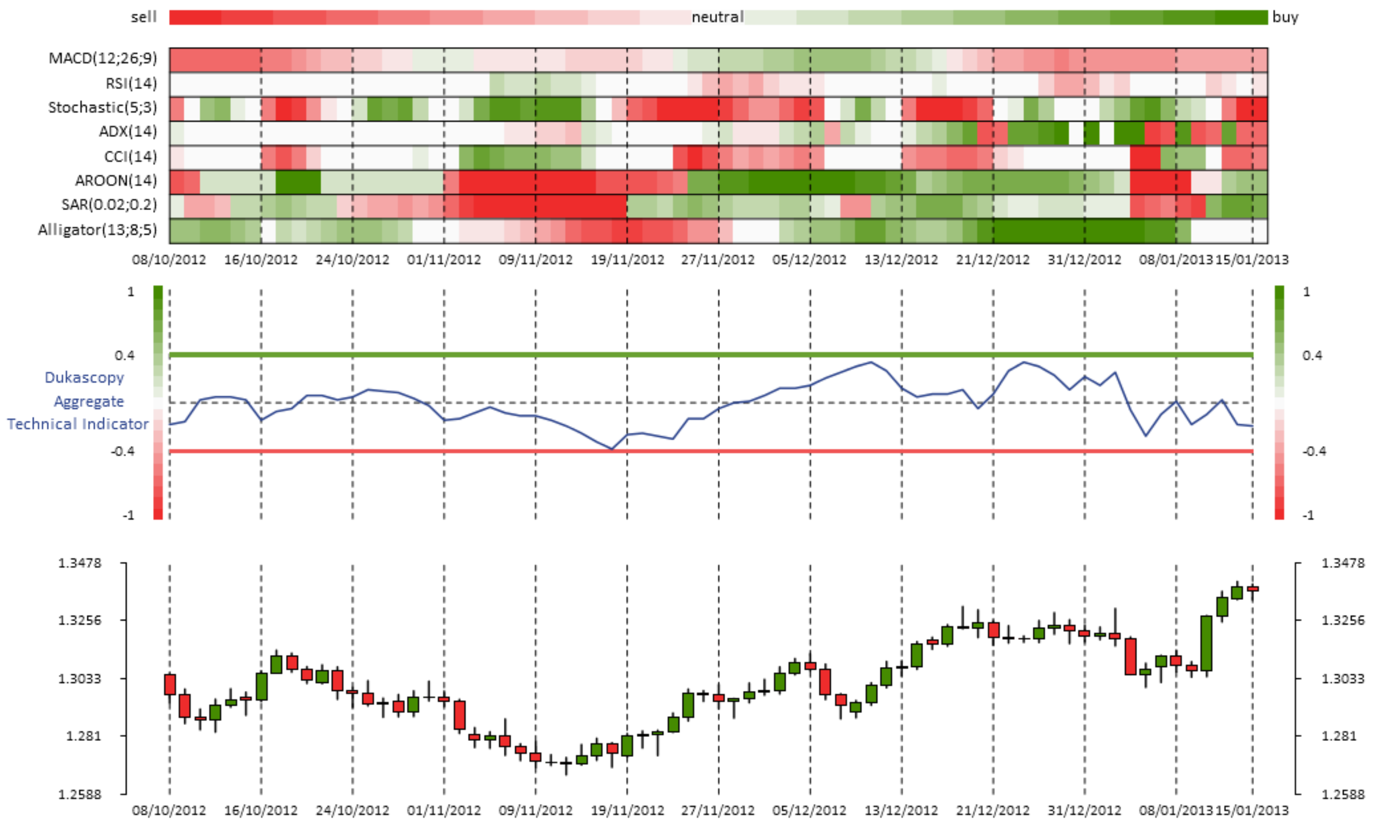
The pattern started on the 12th of October, 2009, when the pair peaked to 0.9412; currently it is trading at 0.8214. Trading volume is U shaped (higher in the beginning and the end and lower in the middle of the pattern). Technical indicators on aggregate point at appreciation of the pair on one-week horizon suggesting it should continue moving towards pattern's resistance. Although both currencies are some of the most sold major currencies across the board, traders perceive the euro as the stronger one as 55% of them have sold the pound versus the euro. Long traders could focus on the monthly pivot (R1)/Bollinger band at 0.8221/23, monthly pivot (R2) at 0.8318, 100-week SMA at 0.8384, 200-week SMA at 0.8544 and pattern's resistance at 0.8702.

Technical indicators on aggregate point at depreciation of the pair on one-month horizon suggesting it should continue following pattern's, downward sloping, trend. Short traders could focus on the major level/50-week SMA at 0.8100/0.8098, 200-day SMA/major level at 0.8016/0.8000, Bollinger band at 0.7912, monthly pivot (S3) at 0.7842, 2012 low at 0.7758 and pattern's support at 0.7618.

Aggregate Technical Indicator

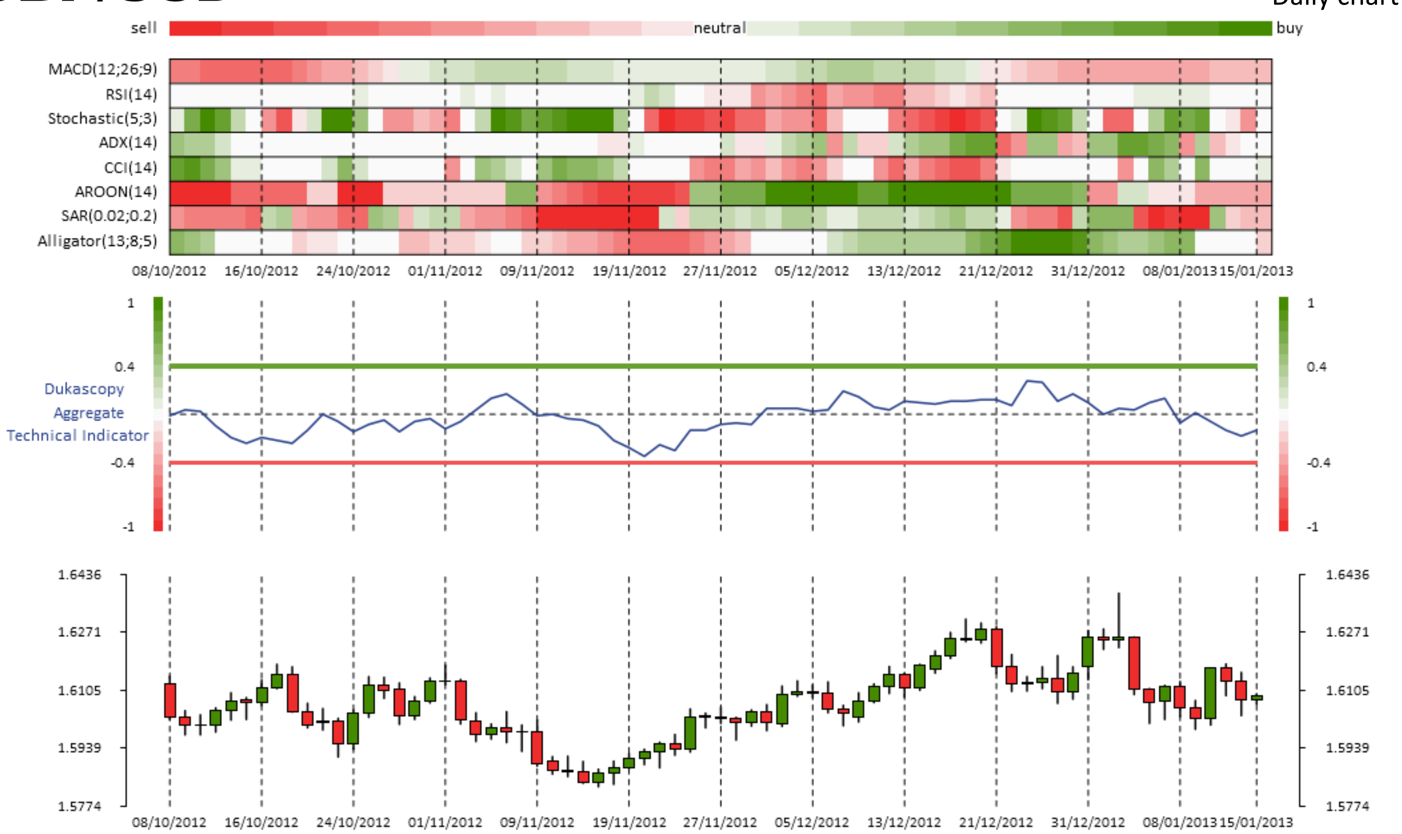
EUR/USD

Daily chart



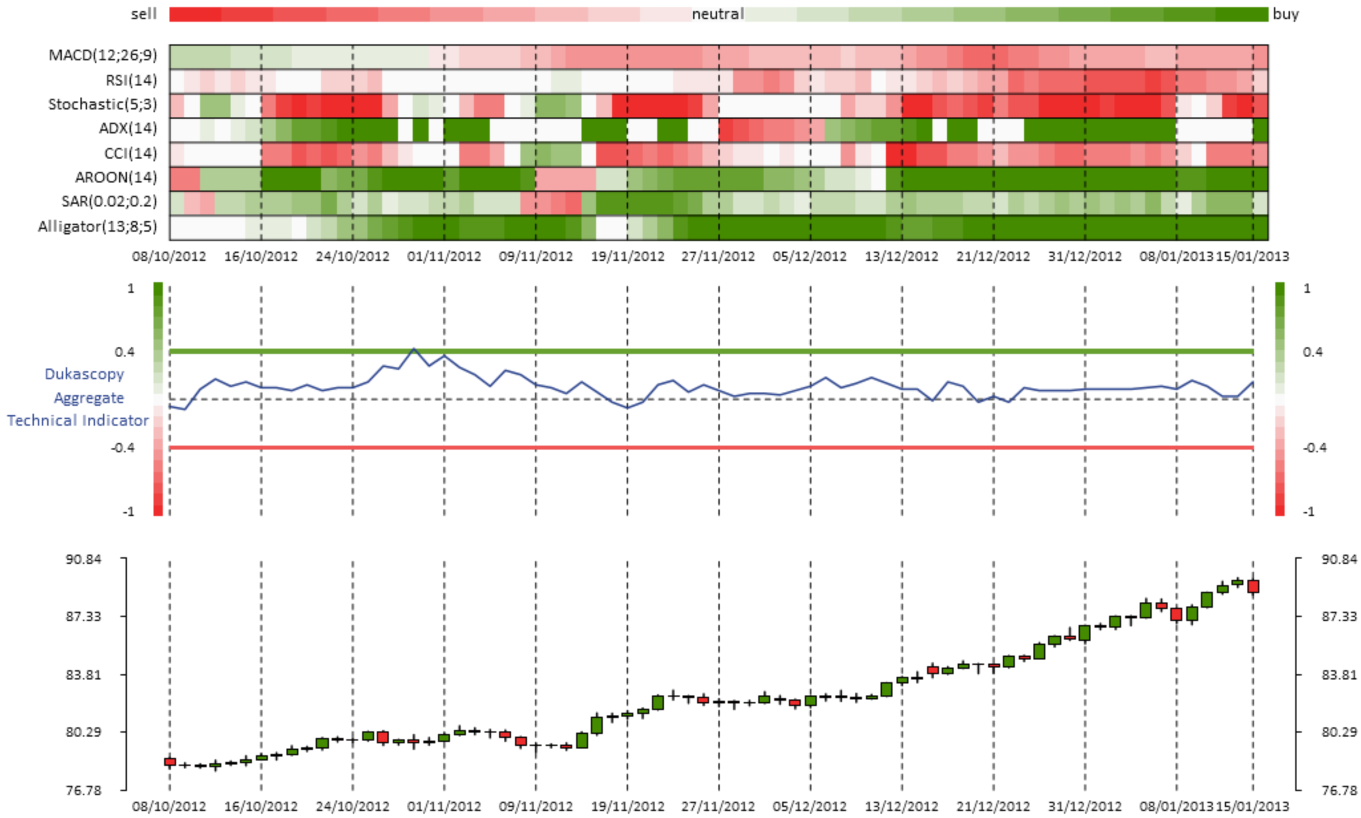
GBP/USD

Daily chart



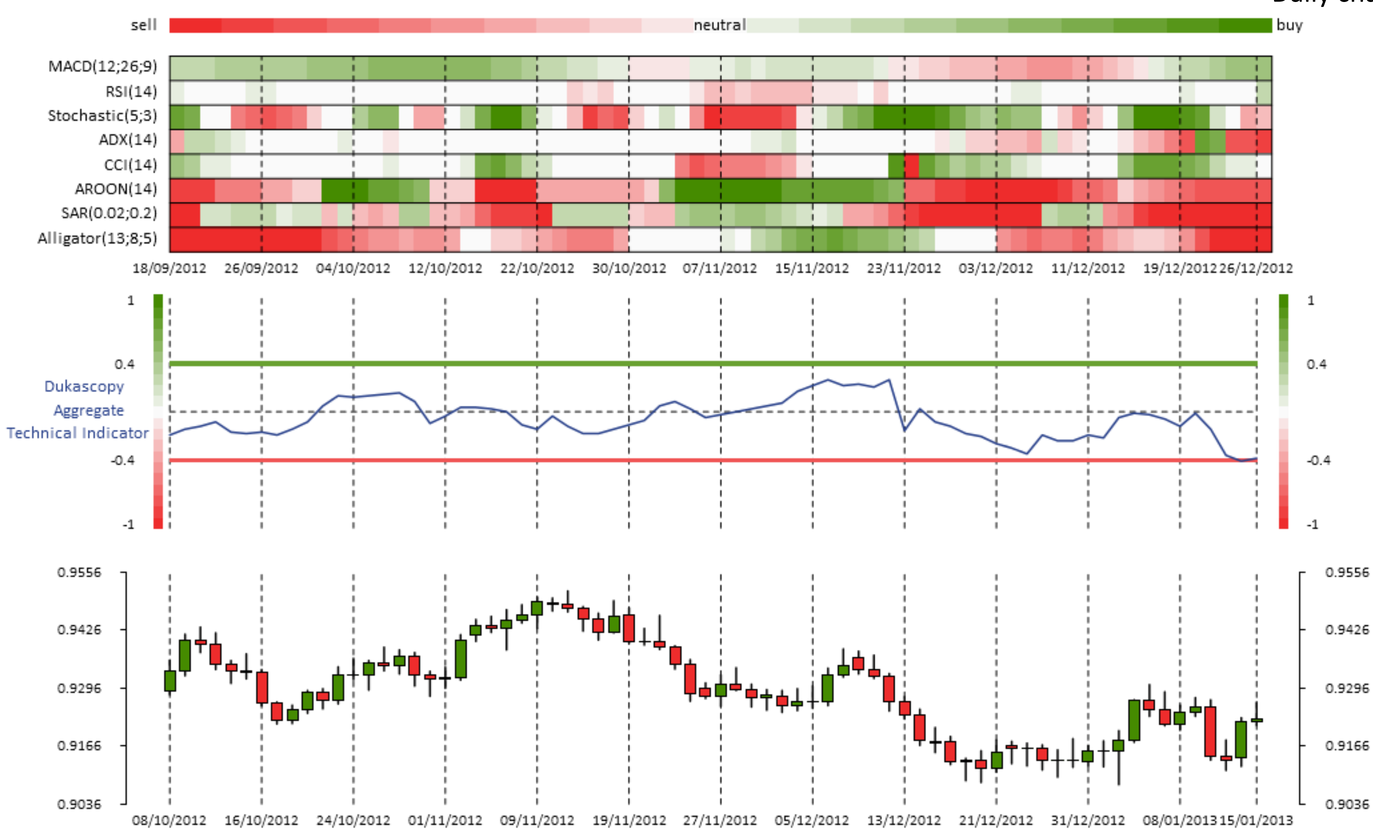
USD/JPY

Daily chart



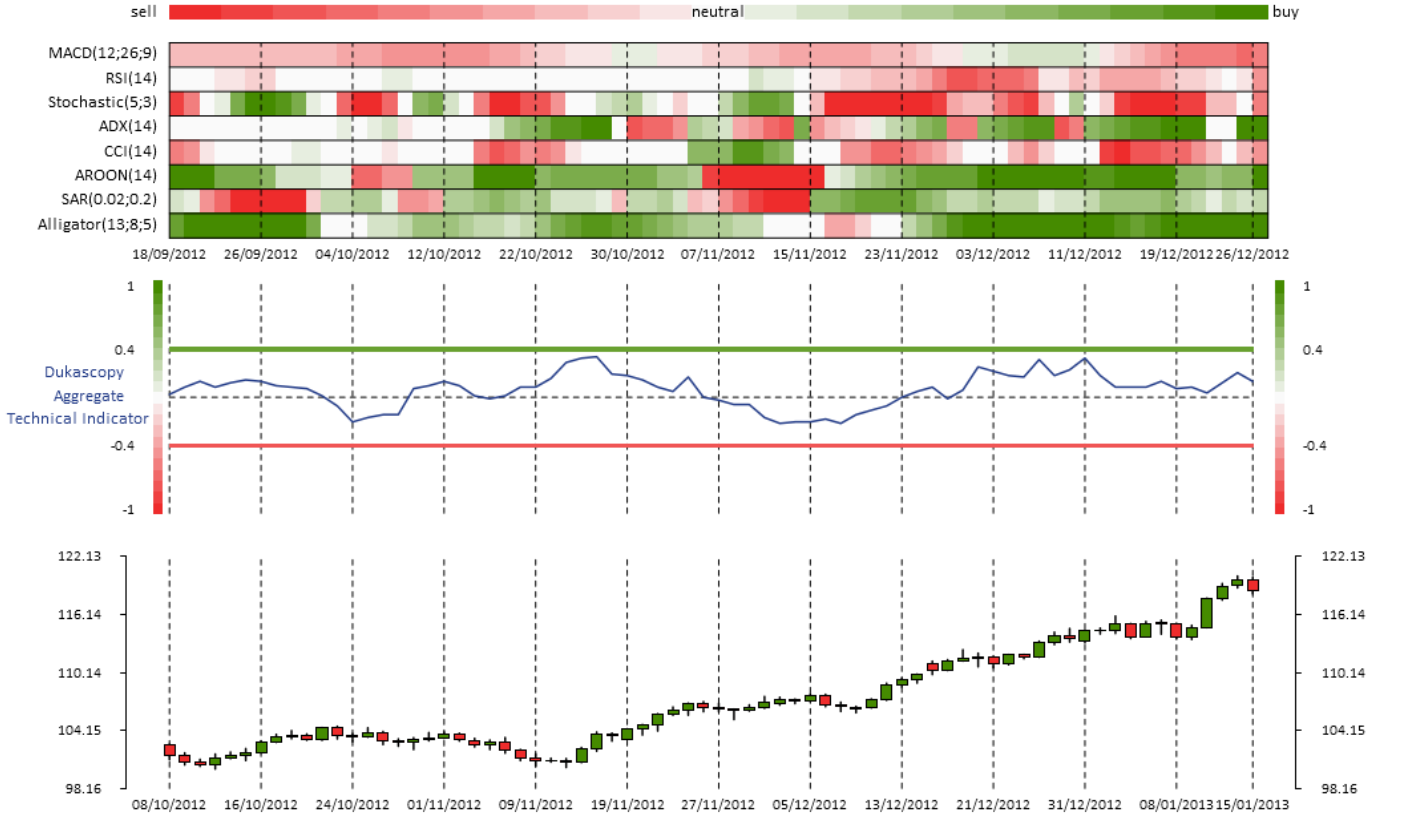
USD/CHF

Daily chart



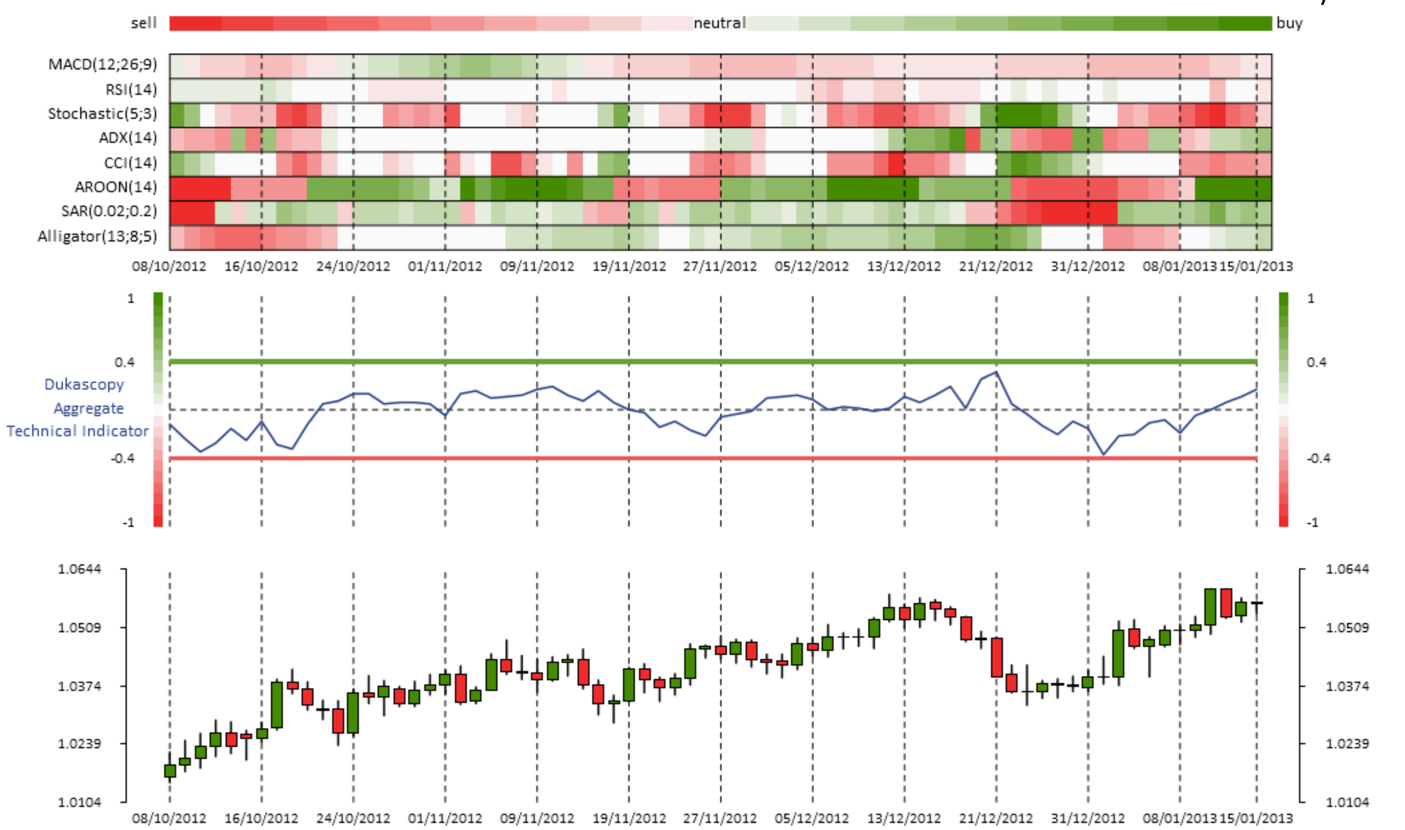
EUR/JPY

Daily chart



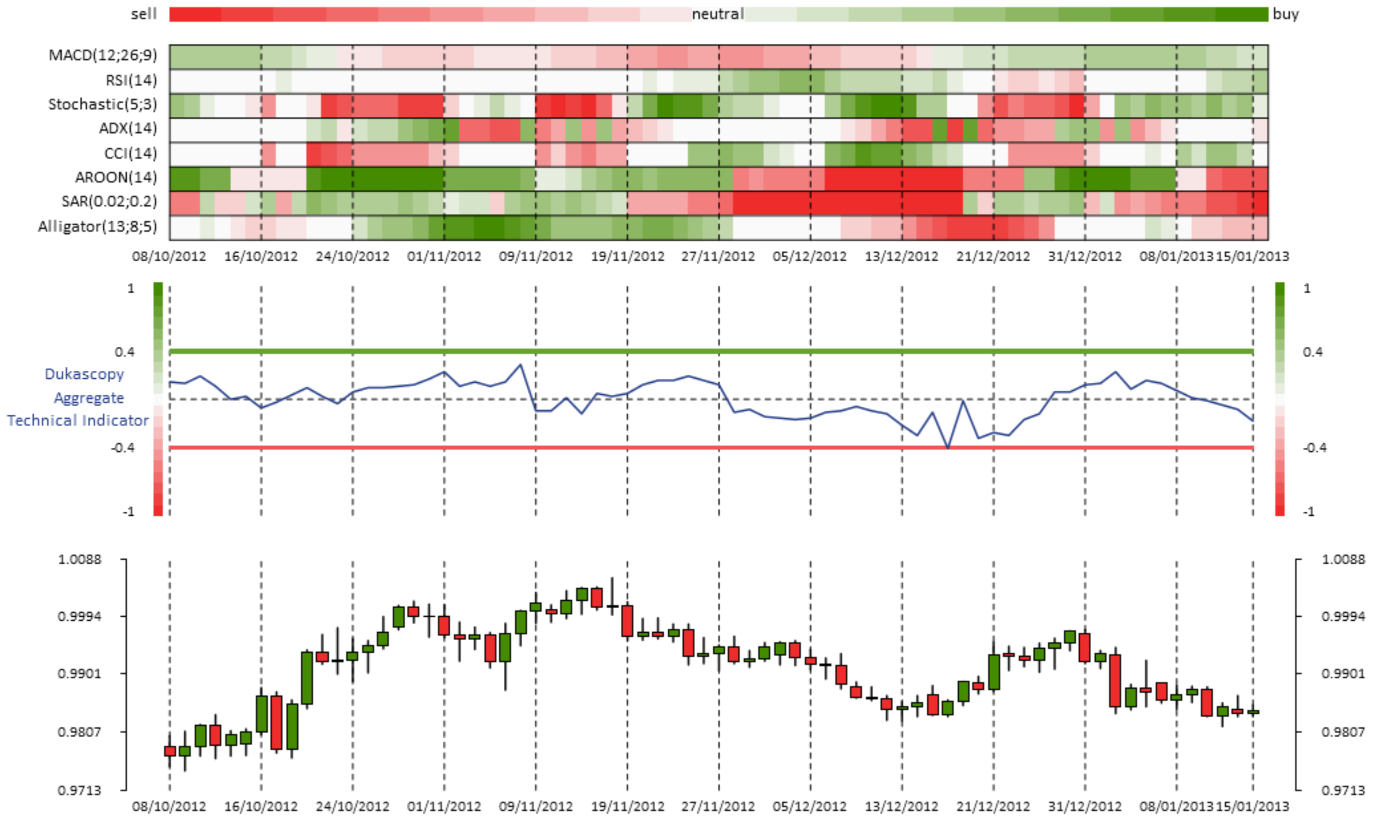
AUD/USD

Daily chart



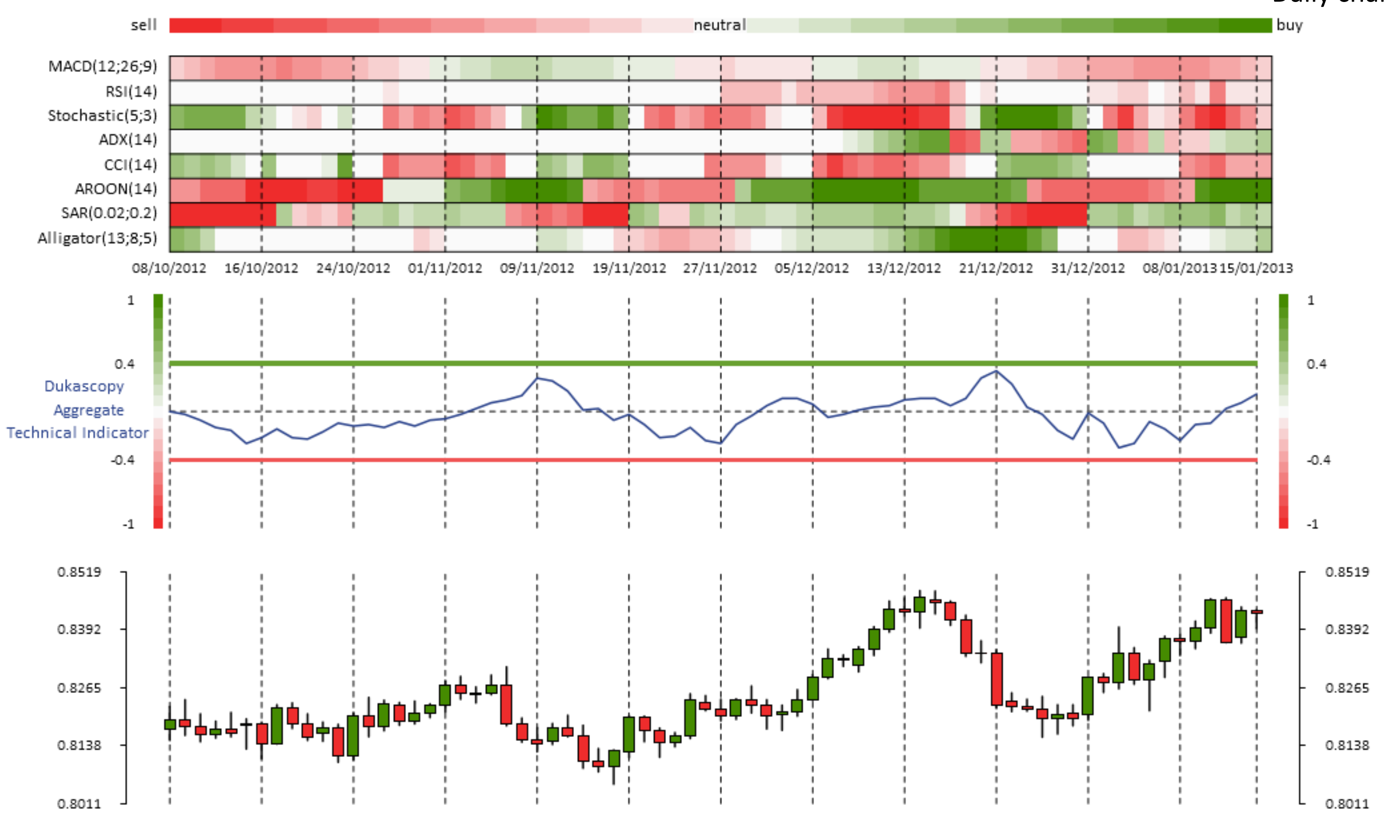
USD/CAD

Daily chart



NZD/USD

Daily chart



Economic Research

Currency Pair Returns: Risks

The Dukascopy Bank SA research department continues its work on statistical properties of currency pair returns. The previous part of the research marked out relationships amongst returns. It was therefore dedicated to a somewhat determinate aspect of their behaviour. In this issue we look into uncertainty of the movements and investigate the parameters that can help reduce it.

The most widely quoted measure of uncertainty in asset movements is volatility. Some sources position it merely as a measure of risk, while others go as far as proposing associated trading strategies. Therefore we set a goal to investigate properties of volatility and see what information it can actually carry.

We base the study on our five top traded currency pairs: EUR/USD, GBP/USD, USD/JPY, USD/CHF and EUR/JPY, - as they seem to be of the greatest interest to our clients. The data used are different frequency exchange rates (2012 ten minute and one hour rates, and 2000-2012 one day rates).

Methodology

Volatility is a measure of how unstable the price of a financial instrument is on a time scale. The more fluctuation it experiences, the higher the volatility is.

Although we mostly use volatility to describe exchange rates per se, the calculations are not based on prices directly. Instead, we derive volatility from returns.

Returns reflect the changes of prices, and asset instability gets captured in their fluctuations. Namely, interchanging positive and negative returns of great magnitude define high instability, while smaller variations indicate calmer movements (see Figure 1).

In the following sections we discuss such features as currency pair volatility levels, volatility clustering, periodicity, and effects of scaling volatility.

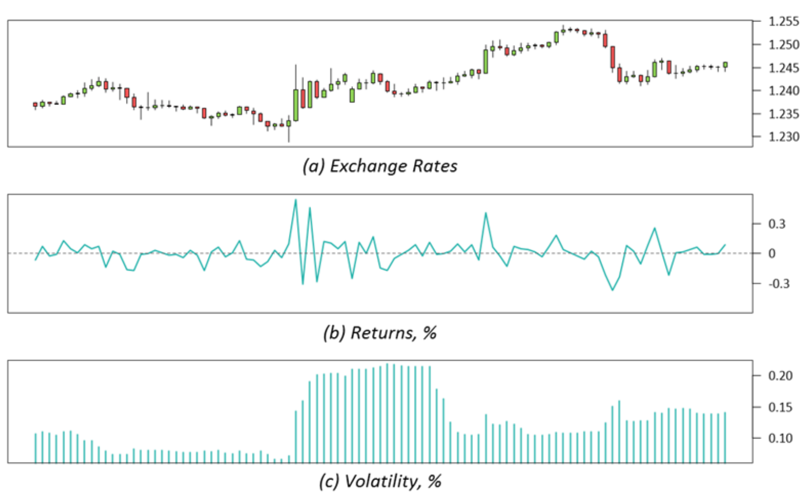


Figure 1: 5-day sample for EUR/USD data

Volatility Calculation

There are several commonly used formulas for calculating volatility, but they all reflect similar ideas. In fact, the most popular ones – squared returns, return absolute values, and return standard deviations, - are derived from the same notion.

Assuming average return to be zero and considering only one value, we get an absolute value measure of volatility. Removing the root from the formula produces a squared return measure.

Standard deviation is a statistical measure of data spread around the mean. For currency pair returns it can be estimated as:

$$\sqrt{\frac{\text{sum of squared (return - average return)}}{\text{number of returns - 1}}}$$

Figure 2 shows that significant peaks of volatility almost always coincide across the measures. Thus we can expect to receive similar signals whichever formula we use. However, we can also see the differences between the measures, as well as pros and cons of using one or the other. Squared returns and return absolute values appear to be almost as chaotic as returns themselves, giving us little additional information. Besides, they require making an assumption about average return, which automatically makes them less accurate. Standard deviation, on the other hand, is more precise and more consistent, as it averages the value over a certain period. It thus lets us evaluate any new price movement in respect to previous ones, and see whether it really is out of the ordinary. On the downside, the measure is strongly dependent on the said period, and there is no prescribed method for choosing it.

Another obvious, but nevertheless important, difference is the range of values. Squared returns are typically measured in hundredths of per cent, while absolute values and standard deviation – in tenths. In addition, absolute values tend to have higher peaks than standard deviations. Thus, to interpret the values correctly it is important to know which measure of volatility is used.

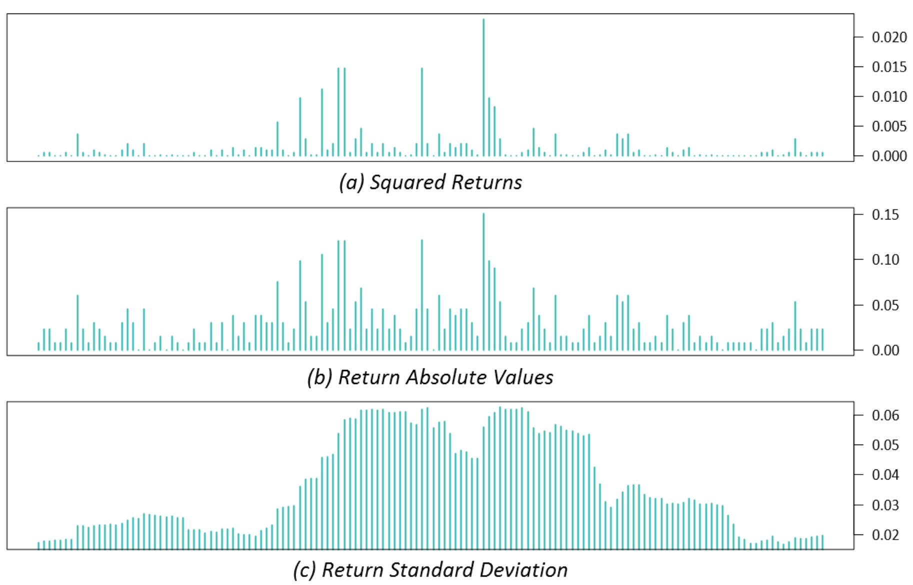


Figure 2: 1-month sample for EUR/USD returns

Results

1. Each currency pair has a specific volatility range.

We have investigated sets of one-week volatilities for intraday rates and 3-month volatilities for daily data. It appeared that each currency pair has a normal volatility level of a sort - a range of frequently reoccurring values. Furthermore, relative levels hold for all frequencies and time-frames: EUR/JPY seems to be the most volatile, USD/CHF and EUR/USD are in the middle, but USD/JPY and GBP/USD are the calmest. The table below shows approximate ranges that cover half of all observed values. Thus, 50% of volatility values are expected to fall into said intervals, but any numbers outside it can be considered either elevated or low.

Frequency	EURJPY	USDCHF	EURUSD	USDJPY	GBPUSD
10-minute	0.04-0.07	0.03-0.05	0.03-0.05	0.02-0.04	0.02-0.04
1-hour	0.11-0.16	0.08-0.12	0.08-0.12	0.07-0.10	0.06-0.09
1-day (2000-2012)	0.60-0.86	0.59-0.77	0.56-0.70	0.51-0.70	0.48-0.61
1-day (2011-2012)	0.64-0.85	0.60-0.89	0.59-0.73	0.42-0.61	0.43-0.54

Table 1: Normal volatility ranges

The last row shows that ranges may change over time. Here USD/CHF became slightly more volatile in the past two years, while USD/JPY and GBP/USD, on the contrary, calmed even more.

Figure 3 shows EUR/JPY and GBP/USD volatility histograms – diagrams that connect values to the frequencies of their appearance. It serves as a good illustration for the proposed currency pair ranking: not only is EUR/JPY more volatile on average, its values are twice as extreme as GBP/USD. Therefore, it has both a higher general volatility range and further surges out of it.

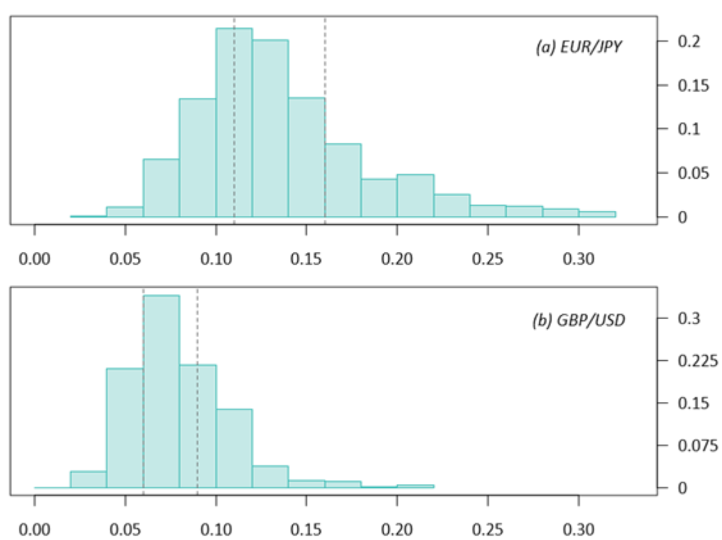


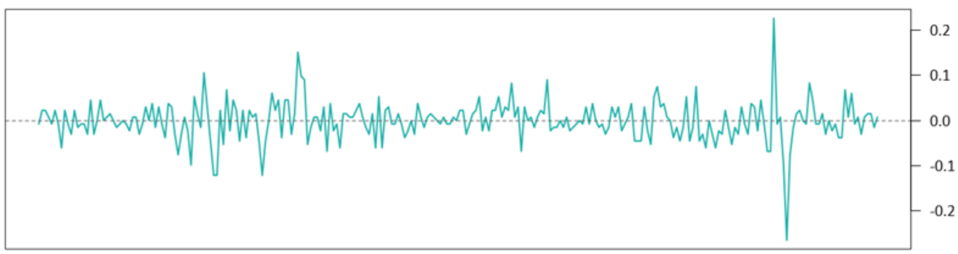
Figure 3: 1-hour volatility histograms with normal volatility ranges

2. Volatility tends to linger on the achieved level.

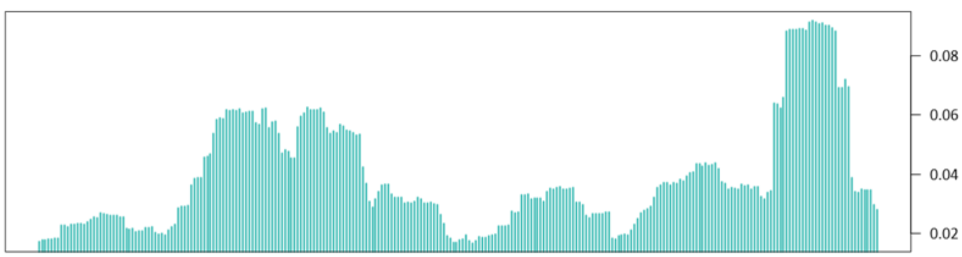
This phenomenon is known as volatility clustering – high (low) values of volatility are usually followed by high (low) values. This means that, in absence of any disturbing news, currency pair volatility changes gradually, and for some period of time one can expect it to be approximately the same. One way to establish this period is to look into volatility autocorrelation.

Autocorrelation is a measure of dependence between present and past values. It ranges between -1 and 1. A positive autocorrelation indicates that new values tend to follow a previous trend, but negative – that they generally change direction. Lag marks the time difference between present and past: lag 1 is one-period difference, lag 2 – two-period, and so on.

As standard deviation is calculated over several return values, it may seem that positive autocorrelation here is merely due to calculation specifics. However, the maximal lag for which the values stay statistically greater than zero exceeds the period used in the volatility formula. In addition, autocorrelation of currency pair volatility proves to be positive for all definitions. Thus the result indicates a real existing relationship. Furthermore, analysis has shown that autocorrelation values increase with decreasing frequencies.



(a) Returns, %



(b) Volatility, %

Figure 4: 10-minute EUR/USD returns and volatility

For 10-minute volatility, autocorrelation goes from 0.3 out of 1 down to 0.01, and maximal lag is 45. Thus the relationship, however weak, holds for up to seven hours. Autocorrelation for hourly volatility keeps above 0.1 for 50 lags, or two days, but for daily values – as long as two months.

These results, of course, are general, and do not express any strict laws of volatility behaviour. However, they show two things to bear in mind. Firstly, that a single burst in volatility, e.g., in response to a news release, can elevate the instability level for a long period of time after the event. And secondly, that calm and steady periods only last for a limited amount of time, and must not be heavily relied on.

3. Volatility of high frequency rates is periodical.

Periodicity is a quantity's property of taking the same values at regular time intervals.

In relation to a stochastic variable like volatility, such a definition is too strict. Rather than taking absolutely identical values, it periodically returns to the same levels, making certain time periods generally more volatile than others. Autocorrelation can be used to examine this property in the same way it was used for clustering.

Figure 5 shows that the relationship for 10-minute volatility tends to strengthen every 12 hours, with interchanging positive and negative values. Thus, for example, a current high volatility level will be replaced by a lower one in the next 12 hours, but will be reached again by the same time the next day. The second part of the figure is a good illustration of this effect. It suggests that midday is the most volatile part of the day, while mornings and evenings are generally significantly calmer.

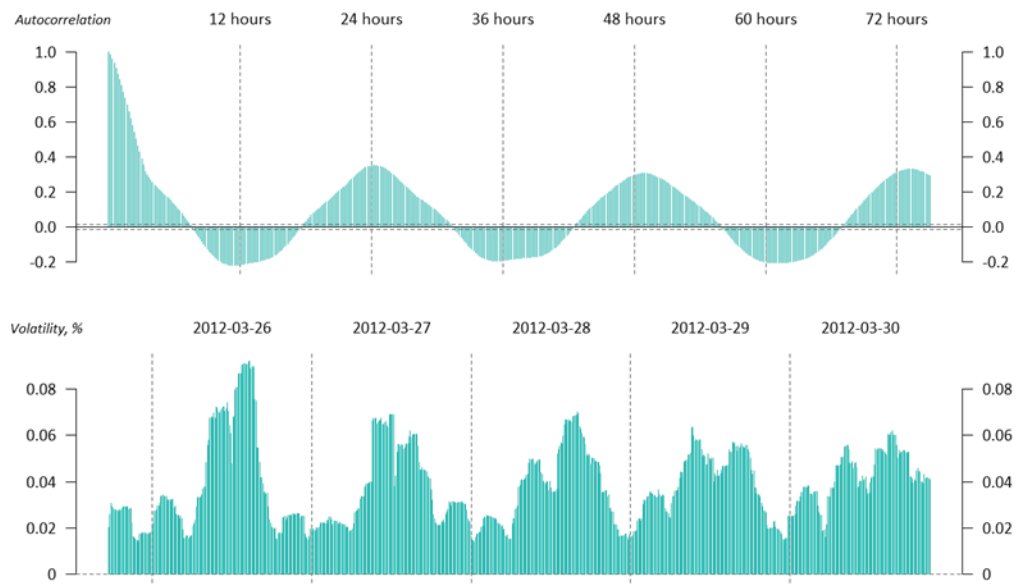


Figure 5 : EUR/USD 10-minute volatility autocorrelation and 1-week sample

The picture stays the same for all examined weeks and almost all pairs. Only the ones with Japanese yen seem to behave differently. EUR/JPY volatility autocorrelations show a little deformed pattern with less negative values, while USD/JPY ones do not have any negative autocorrelations at all. However, periodical strengthening of the relationship is attributable to these pairs as well.

Lower frequency data do not display such a property. Neither hourly, nor daily volatility marks any days, weeks or months as constantly more unstable than others.

4. Volatility scaling often gives significantly inaccurate results.

“Square root of time” scaling is a popular method for converting high frequency volatility into a lower frequency one. It is considered advantageous, because it allows saving both on calculations and data storage. Calculating yearly volatility, for example, would require using yearly exchange rates for the past several years. Not only information like this is hard to find, it is also likely to produce an unreliable outcome, as volatility is too changeable for such broad time frames. Scaling, on the other hand, allows us to calculate daily volatility and use it to get an estimation of a desired value. However, estimations are never precise – they have their confidence intervals and likelihoods. Unfortunately, these are rarely quoted by sources that provide scaled values. That is why it is important to understand the possible degree of inaccuracy, especially in investment planning. Here volatility which is scaled too low can lead to risk underestimation, while one too high can result in overestimating expected profit.

We have calculated scaled volatilities for different frequency data and examined the difference between real and scaled values.

It appears that with the increase of the scale factor, volatility gets mostly underestimated, but rare overestimations become more extreme. Converting volatility from 10 to 30-minute, or from 30 -minute to 1-hour, requires scale factors of 3 and 2 respectively. The difference in such cases is close to zero with minor overestimation. Scaling hourly volatility to daily with a factor of 24 shifts the results into underestimation. Real values exceed the scaled ones by 0.05-0.15%, that is, by less than a quarter of the real volatility. Maximal underestimation is about 0.3%. Negative differences, on the other hand, occur less frequently, but reach the level of -0.7%. This means, for example, that when in reality EUR/USD is extremely calm, scaling shows that its volatility is on an average level.

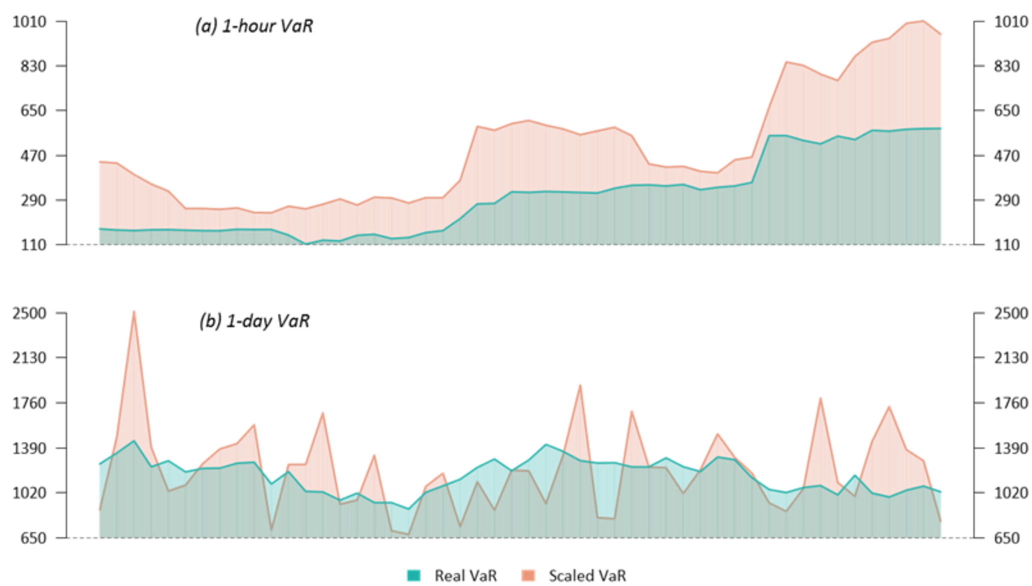


Figure 6: EUR/USD real and scaled Value-at-Risk sample

This effect can be seen in Figure 6. Here we converted volatility into Value-at-Risk for a $100,000 investment. In addition to showing the difference between real and scaled values, the plots highlight how scaling magnifies instability in general.

Conclusion

In this research we have looked into instability of exchange rates and possibilities to reduce its effects. It appeared that under certain circumstances some prognoses are possible. Their accuracy, however, is limited to expecting one or the other level of volatility.

We have found that the magnitude of exchange rate fluctuations changes gradually, and that less stable times generally last longer than calm ones. In addition, high frequency rates seem to be more volatile in the middle of the day, while evenings and mornings offer a calmer picture. This might be useful for both risk-averse and risk tolerant investors while choosing a more preferable trading time.

Scaling appeared to be a rather inaccurate way to convert volatility. It tends to under or overestimate risks, depending on the magnitude of the scaling factor. However, sometimes it is impossible to manage without conversion. In such cases it is important to estimate not only the value, but also its possible error.

Finally, we have established that each currency pair has a typical volatility level, and that some pairs are more unstable than others. Thus, it is possible to balance risks and profits by taking into account this “instability ranking” of currency pairs. However, we have also seen that the levels can change over time. Therefore, to try to use volatility, one must monitor it closely to capture any changes in behaviour.

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