European Rates Strategy

The case for higher bond yields in Europe

Interest Rates

Europe including UK

Justin Knight
Strategist
justin.knight@ubs.com
+44-20-7568 8450

Nishay Patel, CFA
Strategist
nishay.patel@ubs.com
+44-20-7568 8298

Joakim Tiberg
Strategist
joakim.tiberg@ubs.com
+44-20-7568 3435

Andrew Lilley
Strategist
andrew.lilley@ubs.com
+61-2 9324 2618

Reinhard Cluse
Economist
reinhard.cluse@ubs.com
+44-20-7568 6722

Karen Olney, CFA
Strategist
karen.olney@ubs.com
+44-20-7568 8944

Ramin Nakisa
Strategist
ramin.nakisa@ubs.com
+44-20-7567 6861

Geoffrey Yu
Strategist
geoffrey.yu@ubs.com
+44-20-7568 0605

Jennifer Aslin
Associate Economist
jennifer.aslin@ubs.com
+44-20-7568 6585

A bear market in euro area bonds: We recommend investors reduce duration

We believe that the recent bull trend in European government bonds will soon reverse course and that these markets are close to the beginning an important, if slow, bear trend. As a result, we recommend that investors reduce duration exposure in European government bond markets, either in core markets alone or in both core and peripheral markets.

Every argument points to higher yields, except one

European bonds are overvalued from a fundamental perspective, they look expensive relative to both other government bonds and other asset classes; and positioning in the market is currently to the long side, we think. The only remaining reason for lower yields then is that the Eurosystem is now buying bonds and that there may not be enough bonds for it to buy at some point in the future. But this seems weak: the ECB is not likely to squeeze the market in the face of a true shortage of bonds, and history tells us that flow rarely wins out over fundamentals.

The technical case: Investors are long, but may be about to divest

We think that many investors, especially asset managers and hedge funds, are tactically overweight of duration versus benchmarks and have been for some time, preparing for Eurosystem purchases. However, other investors appear likely to move into other markets and the flow data would suggest that a move into equities looks imminent. In addition, there may be extra selling for other reasons by Asian investors.

The fundamental case: The outlook is turning up

We estimate quarterly year-on-year nominal growth at over 2%. The last time that nominal growth was running at this pace, 10-year bund yields were at around 1.80%. We are forecasting a modest 0.90% for bund yields the end of this year, but still some 55bp above the forward yield.

The relative case: European yields are uncompetitive

The yields offered by euro area rates markets are looking very unattractive relative to other bond markets, both in currency-hedged and unhedged terms. Equities also look very cheap in comparison. The unhedged yield comparison is obvious: With the exception of those of Denmark and Switzerland, core euro area 10-year yields are the lowest in the world. When looking at yields adjusted for a 1-year currency hedge, we find that core euro area bonds yield lower than almost all other bonds to investors with other base currencies.

The historical case: The "flow effect" does not last long

Static supply/demand analyses have failed to predict the direction of yield moves in most recent shocks to net bond supply, and we figure this will be another case to add to the list. The trouble with such analyses is that (a) the aggregate supply is much larger than net new issuance, and (b) a small change in economic conditions can spur and cannibalize demand from current holders, at current prices, at a faster rate than central bank demand is increasing.

The risk case: Greek euro exit - hedge this by selling peripherals as well

The most significant risk to our bearish call on core euro area bonds is a potential escalation of the Greek crisis, leading to Greek exit or – to a lesser extent – to capital controls. For investors who hold peripheral bonds in their benchmarks, we would also recommend a move to underweight of duration in those markets as well. The move higher in peripheral yields would likely dwarf the move lower in core yields after a Greek euro exit.

The case for higher bond yields in Europe

We believe that the recent bull trend in European government bonds will soon reverse course and that these markets are close to the beginning an important, if slow, bear trend. As a result, we recommend that investors reduce duration exposure in European government bond markets, either in core markets alone or in both core and peripheral markets.

Since January, yields have largely continued downwards, but even while that has happened, we have become more, rather than less, convinced that they should be moving in the opposite direction.

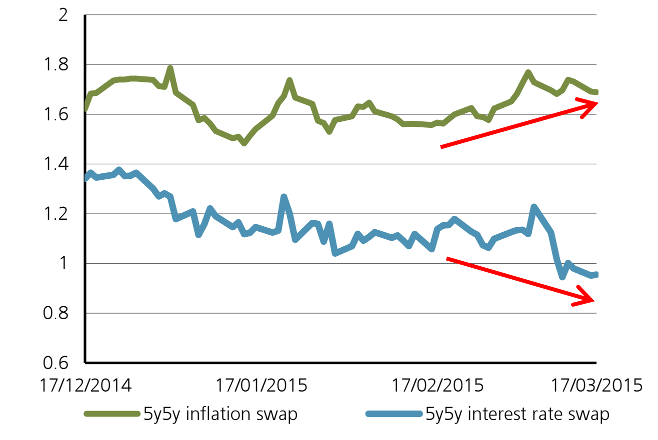
Every argument points to higher yields, except one.

European bonds are overvalued from a fundamental perspective, they look expensive relative to both other government bonds and other asset classes; and positioning in the market is currently to the long side, we think.

The only remaining reason for lower yields then is that the Eurosystem is now buying bonds and that there may not be enough bonds for it to buy at some point in the future. But, as we explain later in this note, this seems too weak an argument: the ECB is not likely to squeeze the market in the face of a true shortage of bonds, and history tells us that flow rarely wins out over fundamentals.

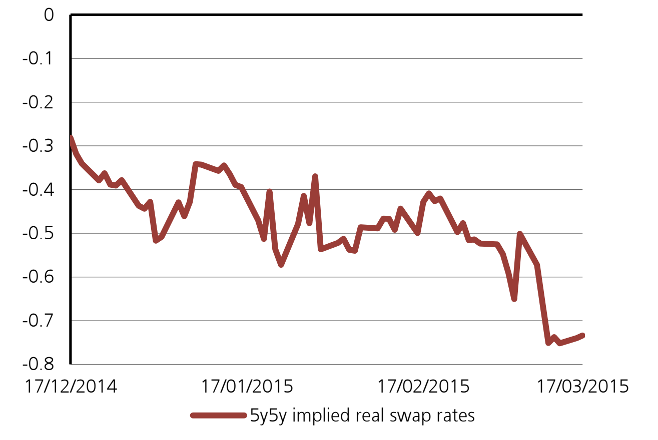
There have even been signs in the recent phase of the market rally that participants are in two minds about the direction of yields. Figure 1 shows that the path of 5-year, 5-year forward interest rate swaps and that of (their component) inflation swaps have diverged over the last month.

Figure 1: 5-year, 5-year forward interest rate and inflation swaps, last 3 months



Source: UBS. Bloomberg

Figure 2: Implied 5-year, 5-year forward real swap rates, last 3 months



Source: UBS, Bloomberg

We do not think that this divergence is sustainable, and the 25bp lurch lower in 5-year forward expectations of real yields since the QE programme began does not make much sense to us.

Put simply, either inflation expectations should fall or nominal yields should rise: It seems clear to us that it is nominal yields which should turn.

A worsening of the Greek crisis is the major risk scenario

The risk to our view, at least in core markets, would be a severe escalation of the current Greek crisis, leading to the imposition of capital controls or even Greek exit. While we still see such an outcome as a risk case scenario, the situation between Greece and its creditors seems to have deteriorated since the four-month extension of the current programme was agreed. As a result, we recommend that those who hold peripheral government bonds also reduce duration weights in their peripheral holdings: in this case we would expect large bear moves in peripheral bonds which would easily make up for the bull moves in core markets.

The technical case: Investors are long - but may be about to divest

We believe that many investors, especially asset managers and hedge funds, are tactically overweight of duration versus benchmarks and have been for some time, preparing for the Eurosystem purchases. European QE has been the most anticipated of all the major QE programmes and yields have continued to fall even as the fundamental outlook has improved markedly.

We think that, aside from a marginal bid arising from the Greek crisis, most of the reason for the buying has been speculative: indeed we think that since the Eurosystem purchases have begun, there has been some additional speculative buying alongside that of the central banks.

The most prevalent reasoning we hear is that because the central banks wish to buy a lot of bonds and net issuance across the euro area will be relatively low, that there may be a shortage of available bonds. This might be possible at some point much further down the line - but there ought to be plenty of bonds available in the short term given market positioning.

Nonetheless, as we argue in more detail later in this note, it does not follow that in the face of such a shortage the Eurosystem would simply keep driving yields to ever-distorted levels. Besides, we would expect the fundamentals to be driving yields by then anyway.

For many other investor categories, we think the attractiveness of European government bonds is rapidly disappearing. Where these investors can (i.e. are not regulated into keeping their government bonds) they seem increasingly to be looking elsewhere: either at other bond markets (which are looking increasingly attractive on a relative basis - see below), or at other asset classes.

Investors to rotate into European equities

Assuming that the ECB achieves its €60bn per month of bond purchases, we would expect a large amount of money returned to investors to go into equities. We discuss the relative value of equities to bonds later in this document, but the cash flow itself could cause a continued rise in the price of equities which should reflect back into bond market valuations. In addition, the flow data suggests that money might already be moving out of bond markets and into equities.

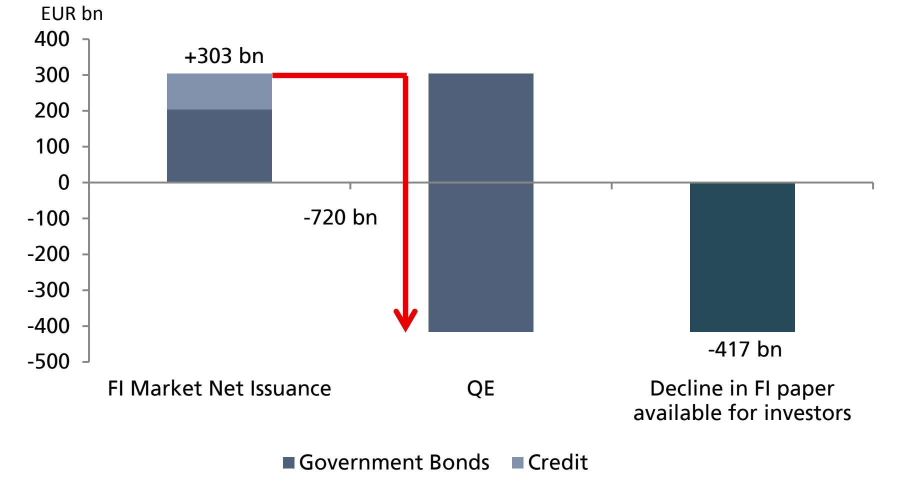
In a recent publication, we compared the total issuance of government and credit paper in the Eurozone with the size of the ECB QE purchases[1]. According to our estimates the fixed income market in Europe cannot absorb the ECB's wall of cash and the ultimate beneficiary will be the large and liquid European equity market.

---

[1] See *"Macro Keys - The ultimate argument for European equity"*, 11 March 2015

The ECB is now purchasing €60 billion per month of debt in cash terms. This is €720 billion per year or 7.2% of Euro Area GDP. As shown in Figure 3 the size of QE purchases will drive a decline in outstanding sovereign and credit paper in the Eurozone over the coming year. Net issuance in sovereign bonds is forecast to be €203 billion; credit will be €100 billion and QE will remove €720 billion meaning €417 billion in cash being returned to private sector bond investors on a net basis.

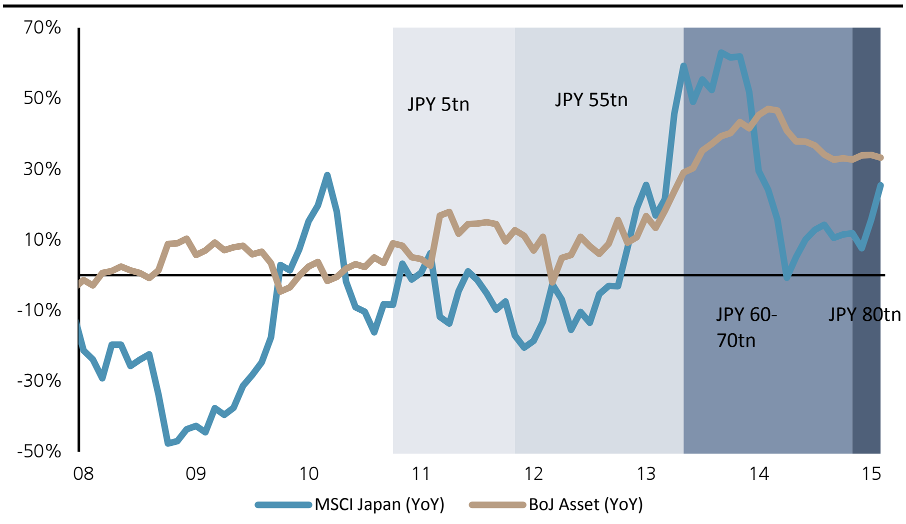
Figure 3: Forecast Eurozone sovereign and credit issuance and ECB QE purchases.



Source: UBS, Haver

The size of asset purchases matters. Using Japan's QQE programme the effect on the equity market was negligible when the rate of asset purchases was ¥5 trillion per year. However when the BoJ increased the rate to ¥55 trillion per year the equity market started to rally quite strongly either directly as a result of the portfolio effect or indirectly via currency depreciation and earnings improvements.

Figure 4: Year-on-year change in MSCI Japan alongside year-on-year change in the size of the BoJ balance sheet.



Source: UBS, DataStream

We find that the size of ECB asset purchases in Europe is half-way between QE3 in the US in 2013 and Japan's QQE from October last year, as shown in Figure 5. According to this simplistic comparison we think the size of the ECB purchases will

be sufficient to spur a rally in equities given the fall in investible outstanding fixed income is equivalent to 6.6% of European equity market capitalization.

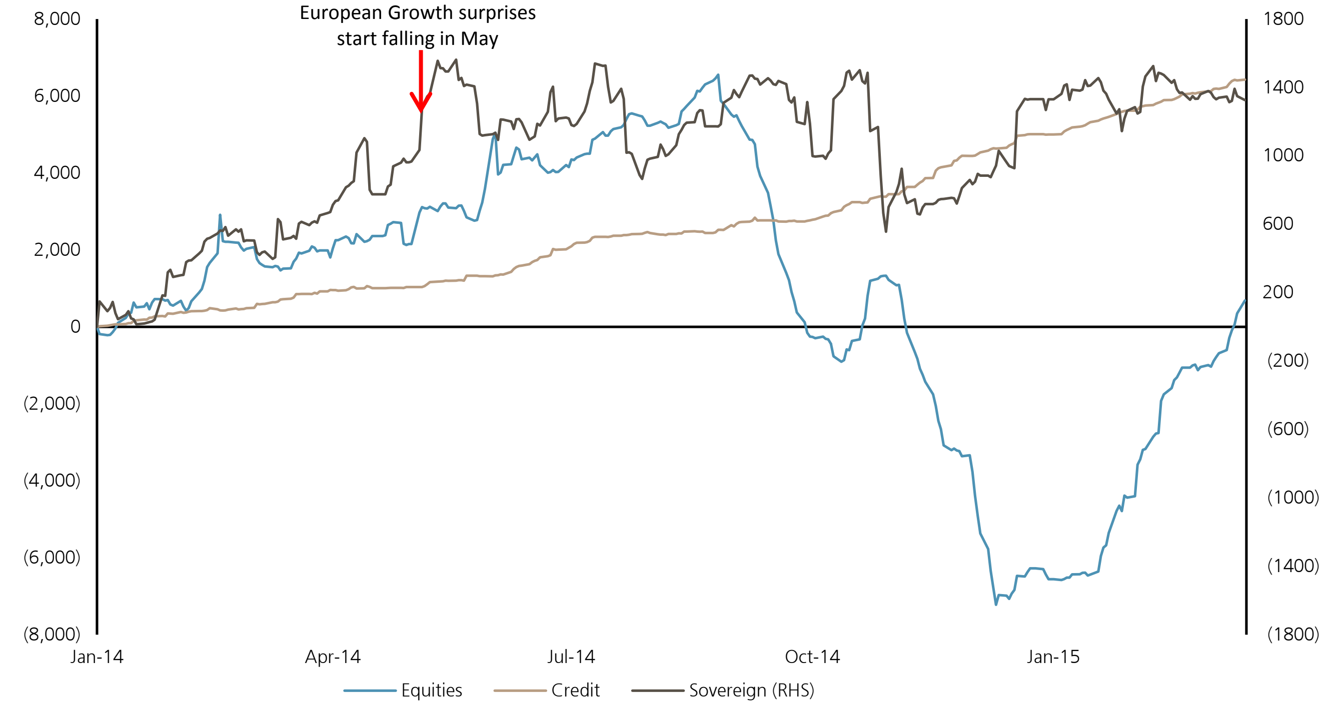
Figure 5: Comparison of scale of QE by the ECB, Fed and BoJ.

	When	How Much		Change in FI Market Outstanding		
		As Cash Amount	As % of GDP	As Cash Amount	As % of net issuance	As % of Equity Market Cap
US Federal Reserve	Jan 2013-Dec 2013	$1.02 trillion	5.8%	+$556 billion	0.4x	3.6%
European Central Bank	2015	€720 billion	7.2%	-€417 billion	1.4x	6.6%
Bank of Japan	Apr 2015-Mar 2016	¥80 trillion	22.7%	-¥51.5 trillion	2.8x	14.7%

Source: UBS, Bloomberg, DataStream

Looking at ETF flows into European equity the surge of inflows which switched on in mid-January continue unabated. The ETF inflow into credit is more sedate, but also shows no sign of abating. However the inflow into European sovereign debt is now showing a slow decline. Clearly the promise of ECB purchases is not sufficient to overcome low income that is now prevalent in European sovereign ETFs.

Figure 6: Cumulative ETF flows into European equity, credit and sovereign bonds from January 2014.



Source: UBS, Bloomberg

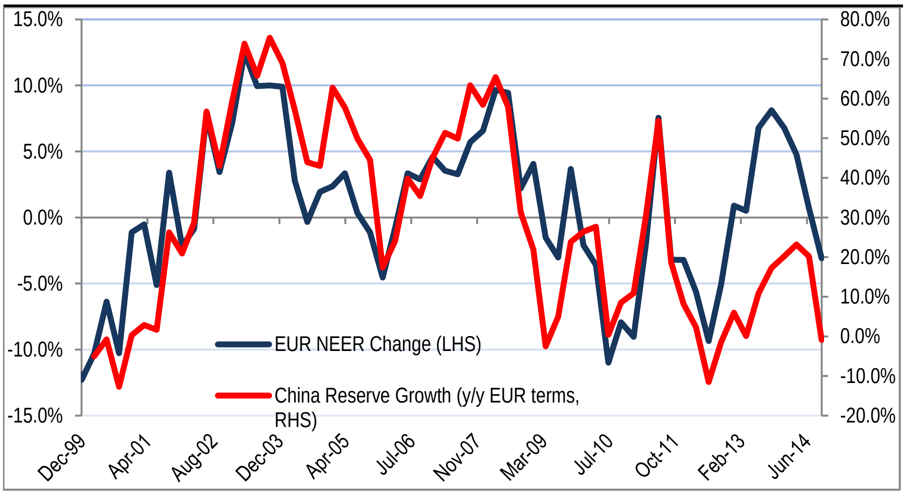
China's rebalancing might mean bond sales, while exacerbating euro downside

In October 2014, we noted that China's State Administration of Foreign Exchange's (SAFE) announcement on a record $105.21bn quarterly outflow in FX reserves probably led to the equivalent of $20bn in sales of euro-denominated paper, net of valuation changes.

The transmission effect is simple – as most of the FX liabilities met during the reserve liquidation process is denominated in dollars, SAFE's portfolio most likely will be underweight the greenback and liquidation of non-USD currencies takes place ex-post to revert to benchmarks.

We see there is a strong relationship during periods of reserve accumulation (where China is the marginal buyer) and liquidation (the marginal seller) between EUR's overall performance and China's reserve changes (Figure 1).

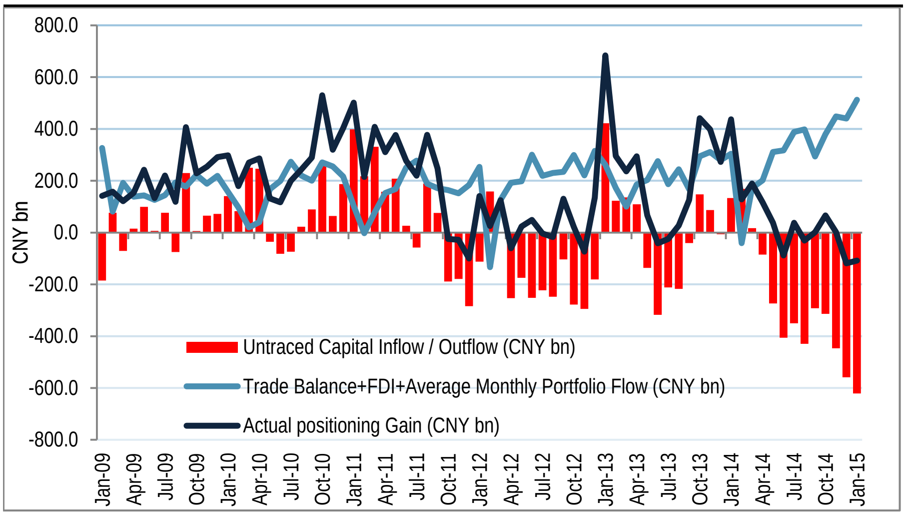
Figure 1: China's effect on EUR via reserve changes



Source: Bloomberg, UBS Calculations

While the figure was tamer at $44.7bn in Q4, we believe such flows have picked up in earnest in 2015 as the non-FDI capital flows picture in China has deteriorated rapidly. It is difficult to obtain up-to-date information on the capital flows picture but the state of USDCNY price action points to rather strong pressures on this front.

Figure 2: Estimated change in non-portfolio outflows



Source: Bloomberg, UBS Calculations

Using FX purchase positions data released by the People's Bank of China, net of current account and financial account credit items, non-FDI outflows likely picked up to CNY620bn in January alone on a gross basis. While not a perfect proxy for reserve change, the FX loan positioning data points to the need for net reserve liquidation close to $50bn in a single month. Data is not available for February, but in light of the depreciation pressure on the CNY despite a burgeoning trade surplus (driven by an import collapse), the scale of outflows could prove similar to January. At this run-rate, net reserve liquidation would have hit $150bn on the quarter, surpassing the record set in Q3 2015.

We believe the ex-post rebalancing has been a key driver behind additional euro weakness. In addition, from China's point of view, if USD demand remains firm then there is every reason for SAFE to remain overweight dollars to meet outflows. Regardless, the outflows seen so far in dollars would most likely have left SAFE relatively underweight dollars, though much would depend on EURUSD would end the quarter.

The scale of the euro decline in Q1 may have caught reserve managers in general by surprise so there may even be a natural overweight in the greenback (assuming a 60% weighting) due to the valuation losses on other currency denominated assets. We estimate the break-even level to be around 11% lower for EURUSD from the Q4 closing level of 1.2098. As such, any EUR rally above 1.075 would generate additional sales from SAFE and possibly other reserve managers. Should such flow materialise, the marginal selling in government paper would be significant. The $20bn per month witnessed in Q3 2014 would provide the ECB with additional available bonds of €18.6bn per month (at 1.075) in cash terms – more than 30% of its monthly target.

The fundamental case: The outlook is turning up

We recently upgraded our euro area growth forecasts, lifting our 2015 projection to 1.6% from 1.2% (consensus 1.4%) and our 2016 forecast to 2.0% from 1.6% (consensus 1.7%)[2][3].

Figure 7: Euro area economic and interest rate forecasts

					2014				2015				2016			
% yoy	2013	2014	2015F	2016F	Q1	Q2	Q3	Q4	Q1F	Q2F	Q3F	Q4F	Q1F	Q2F	Q3F	Q4F
Real GDP	-0.4	0.9	1.6	2	1.1	0.8	0.8	0.9	1.1	1.5	1.8	1.9	1.9	1.9	2	1.9
HICP	1.4	0.4	0.1	1.5	0.7	0.6	0.4	0.2	-0.4	0	0.1	0.7	1.3	1.3	1.5	1.7
ECB refi rate (yr-end)	0.25	0.05	0.05	0.05	0.25	0.15	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
German 10yr yield (yr-end)	1.9	0.6	0.9	2	1.5	1.3	1	0.6	0.5	0.6	0.7	0.9	1.1	1.4	1.7	2
EUR/USD (end period)	1.38	1.21	1.15	1.1	1.38	1.37	1.26	1.21	1.2	1.18	1.17	1.15	1.14	1.13	1.11	1.1

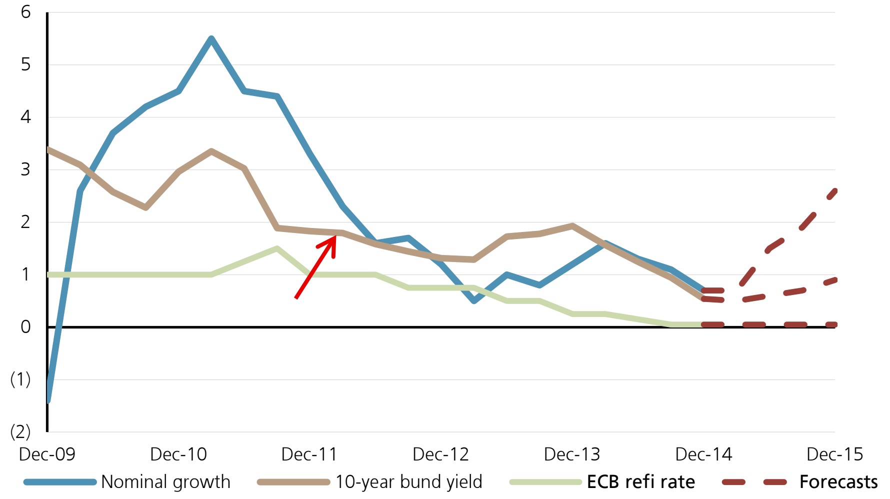
Source: Haver, UBS estimates

With our forecast for inflation for Q4 2015 at 0.7% year-on-year, we estimate quarterly year-on-year nominal growth at over 2%. The last time that nominal growth was running at this pace, 10-year bund yields were at around 1.80% (Figure 8). We are forecasting a modest 0.90% for bund yields the end of this year, but still some 55bp above the forward yield.

[2] See "European Economic Perspectives - Europe: A more constructive growth outlook", 12 March 2015

[3] Consensus data are updated as of March 2015.

Figure 8: Euro area nominal GDP growth (quarterly, yoy), 10-year bund yields and ECB refi rate, Dec 2009 to date & forecast



Source: Haver, Bloomberg, UBS

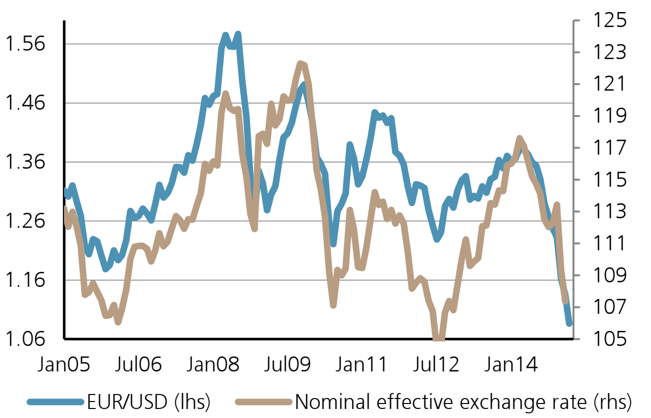
Multiple drivers of growth

We see 5 drivers of growth in economic activity over the coming 6-8 quarters:

1. Accommodative ECB monetary policy and weaker euro: The ECB's monetary policy is more accommodative than it has ever been. Besides low yields and very low borrowing costs in large parts of the euro area, the key impact of QE has been the depreciation of the euro, which has weakened by 27% against the dollar since peaking in March 2014. The nominal effective exchange rate (NEER) of the euro has weakened by nearly 9% during the same period.

According to a sensitivity analysis conducted by the ECB, a 10% change in the NEER of the euro would lift GDP by 0.2pp in the first year, a cumulative 0.4-0.6pp over two years, and 0.6-0.9pp over three years (Figure 10). In our view, the weaker euro will be the single most important driver of euro area growth over the coming quarters. This impact is likely to be particularly pronounced in the export-orientated manufacturing powerhouses at the core of Europe.

Figure 9: EUR/USD and nominal effective exchange rate



Source: Haver, UBS.

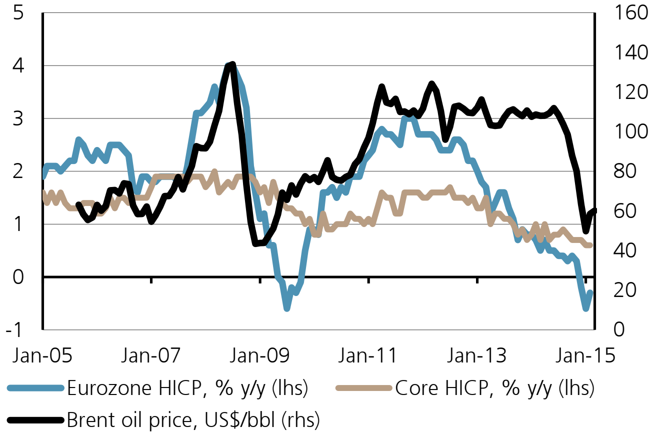
Figure 10: Impact of a 10% appreciation in the NEER

	Percentage point deviation from baseline (cumulative)		
(annual averages)	Year 1	Year 2	Year 3
Real GDP			
AWM*	-0.2	-0.6	-0.9
GVAR*	-0.2	-0.4	-0.6

Source: ECB 'The changing role of the exchange rate in a globalised economy, Occasional paper no. 94, September 2008. * AWM and GVAR are two statistical models the ECB uses.

2. Low inflation and declining oil prices: The current fall in consumer prices (HICP was -0.3% y/y in February), driven above all by the 45-50% decline in oil prices since mid-2014, is providing support for household consumption, which makes up for 56% of euro area nominal GDP. As input costs decline, corporate profits might also improve, with potential benefits for investment and employment – although we would assume that corporates will initially maintain a cautious attitude to investment and hiring, given the many "false dawns" the euro area has experienced in recent years. According to ECB estimates, a 10% decline in oil prices might, *ceteris paribus*, lift euro area GDP by 0.08pp in the first year, a cumulative 0.19pp in year 2, and a cumulative 0.24pp by year 3 (Figure 12).

Figure 11: Euro area headline & core HICP and oil price



Source: Haver, UBS

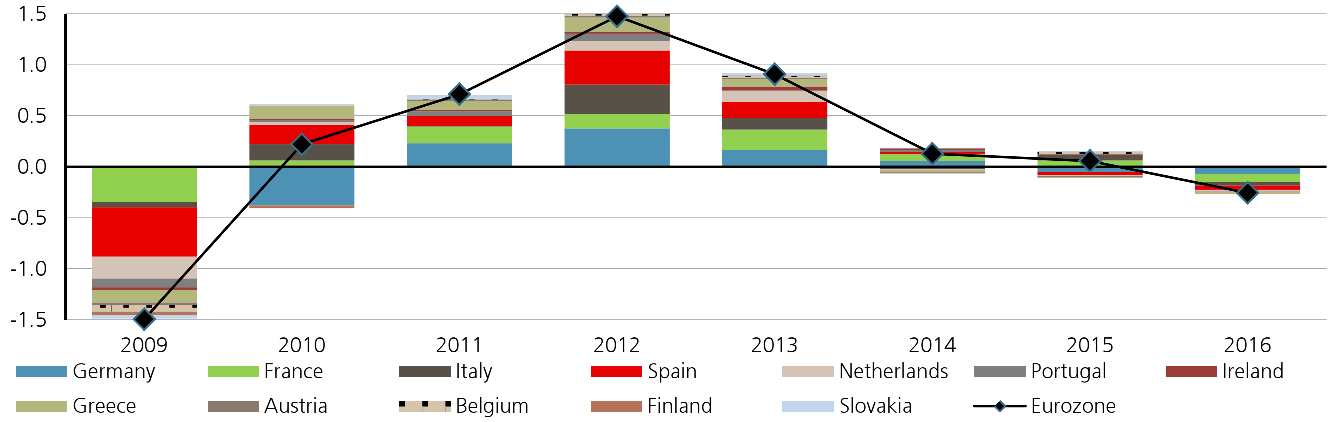
Figure 12: Effect of a 10% oil price drop on Euro area activity*

(cumulative percentage deviations, annual averages)	Year 1	Year 2	Year 3
Real GDP	0.08	0.19	0.24
Private consumption	0.14	0.27	0.33
Investment	0.09	0.24	0.35
Exports (goods and services)	0.03	0.09	0.12
Imports (goods and services)	0.10	0.15	0.19
Net trade contributions	-0.03	-0.02	-0.02
Employment	-0.01	0.04	0.11

Source: ECB, Monthly Bulletin, August 2010, 'Oil Prices – Their determinants and impact on Euro Area inflation and the macroeconomy. *In the original article, the ECB simulated a positive oil price shock; we have therefore reversed the sign to illustrate the effect of lower oil prices.

3. Fiscal austerity is moderating: According to our estimates based on fiscal data from the European Commission, fiscal policy in the Euro area is no longer a headwind to growth at the aggregate level. While budget austerity might have subtracted significantly from Euro area growth in 2012, the effect moderated in 2013, was close to neutral in 2014 – and might well turn into a mild tailwind for growth in 2015 and 2016 (Figure 13).

Figure 13: "Fiscal effort"* in the Euro area (in % of Euro area GDP)



Source: Haver, European Commission, IMF, UBSe.* Reduction in structural budget deficit. Contributions from individual countries are GDP-weighted.

After all, the heavy lifting of fiscal consolidation has now been done in many countries (among the bigger countries only France and Spain remain in an

"excessive deficit procedure"), the broader policy stance in the EU seems to be moving towards accepting the need for some greater fiscal flexibility, and the Juncker Plan might provide some limited stimulus as of late 2015.

4. Improving monetary transmission mechanism: Following the ECB's Asset Quality Review and stress test, the capitalisation of Euro area banks is being strengthened. Over time, this should improve banks' ability to extend credit again, which should facilitate the transmission of the ECB's accommodative monetary policy – although the demand for credit might recover only gradually. The ECB's quarterly Bank Lending Survey paints an encouraging picture (*ECB: an encouraging Bank Lending Survey*, 20 January 2015), although a full recovery of credit growth in Europe will obviously take more time.

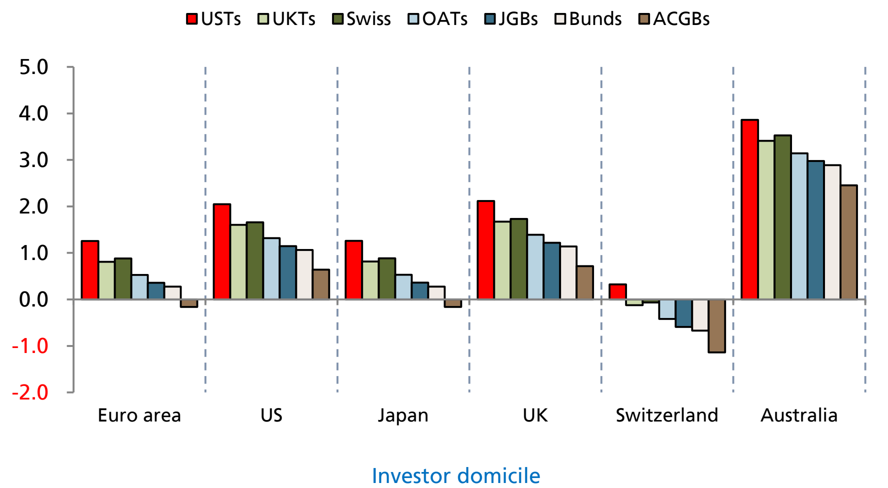
The relative case: European bonds are uncompetitive

The yield offered by euro area rates markets are looking very unattractive relative to other bond markets, both in currency-hedged and unhedged terms. Equities also look very cheap in comparison.

Yields look better almost everywhere

The unhedged yield comparison is obvious: With the exception of those of Denmark and Switzerland, core euro area 10-year yields are the lowest in the world. When looking at yields adjusted for a 1-year currency hedge, we find that aside from Australian bonds, core euro area bonds yield lower than other bonds to investors with other base currencies[4].

Figure 14: 10yr FX-hedged yields in core markets for investors in various domiciles (benchmarks, %)

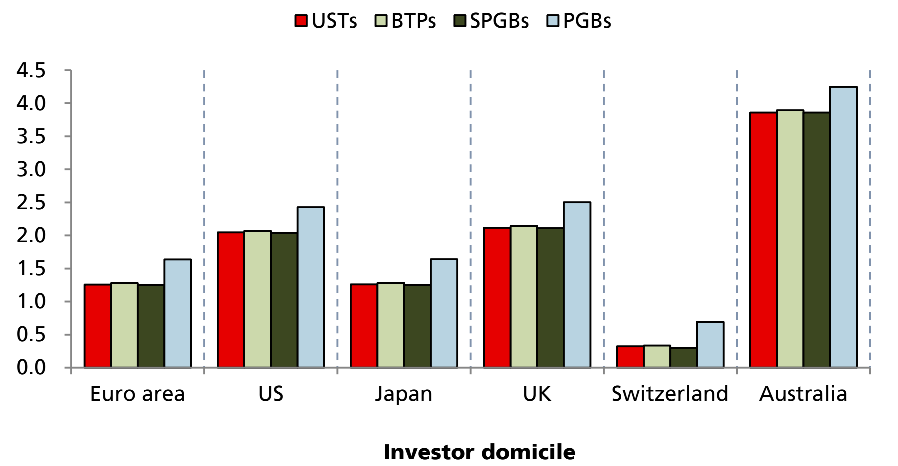


Source: Bloomberg, UBS   Currency hedge calculated as implied return from 12m FX fwd points

This is also true for 10-year Spanish and Italian bonds when comparing them to US treasuries on a hedged basis. Only Portugal beats the US by this measure.

[4] For more on relative FX-hedged yields, please see *"European rates Perspectives: Disappearing Value", 12 March 2015*

Figure 15: 10yr FX-hedged yields, euro peripherals and USTs (benchmarks, %)

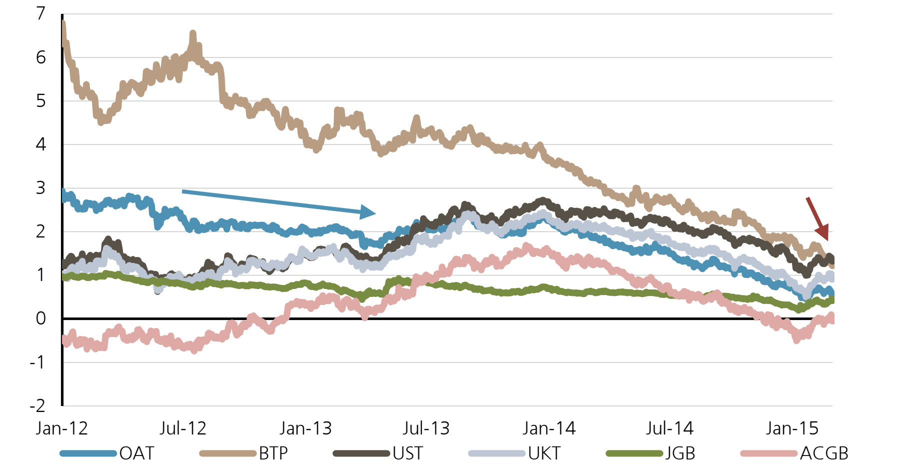


Source: Bloomberg, UBS — Currency hedge calculated as implied return from 12m FX fwd points

Japanese investors might cut back on Euro area holdings from April

Japanese investors have been keen buyers of European bonds, investing in French government bonds heavily in recent years. The OAT market is liquid, France ranks sufficiently well on the credit rating spectrum, and have historically offered some FX-hedged yield pick-up over US treasuries (Figure 16), Japanese investors' main overseas source of diversification.

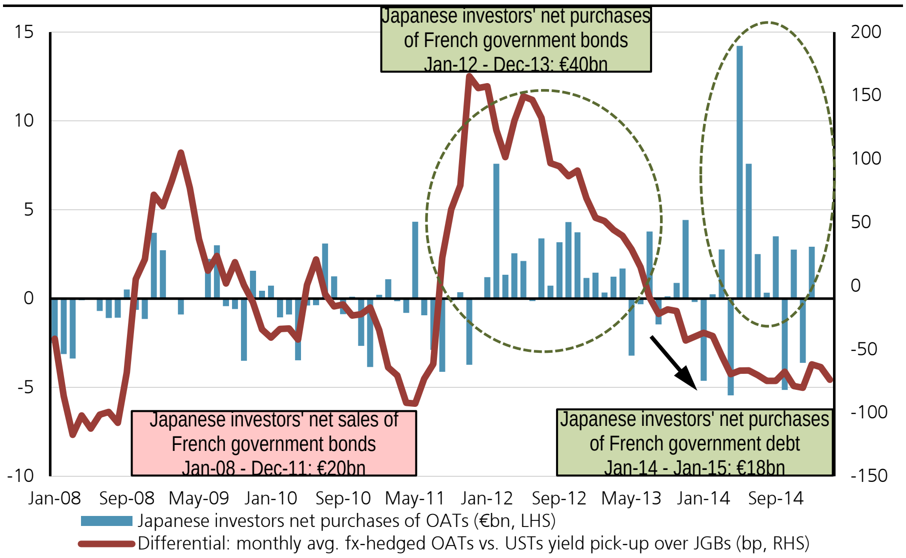
Figure 16: A JPY investor's perspective: 10yr OATs no longer attractive on a FX-hedged relative basis; USTs and gilts increasingly so (benchmarks, %)



Source: Bloomberg, UBS — Currency hedge calculated as implied return from 12m FX fwd points

Japanese investors continued to buy French bonds in 2014, despite the increasing FX-hedged yield pick-up offered by US treasuries (Figure 17). We think this represents positioning in anticipation of ECB monetary easing. Now, with Eurosystem QE purchases underway and a new fiscal year about to start in Japan, we suspect that Japanese investors will trim their EGB holdings over the next few months. While the main part of reallocation flows would likely go into US treasuries, it is possible that the UK gilt market, historically not a significant destination for Japanese investors, also could benefit.

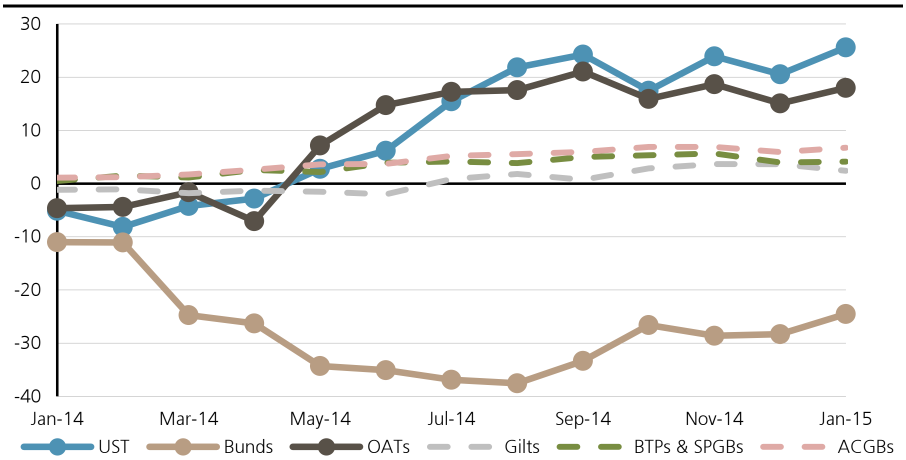
Figure 17: Japanese investors' net purchases of OATs vs. the difference in FX-hedged yield pick-up over JGBs offered by OATs and USTs



Source: Japan MoF, Bloomberg, UBS   Currency hedge calculated as implied return from 12m FX fwd points

In the 13 months to January 2015, Japanese investors added €18bn worth of OATs to their holdings – just short of the €26bn of net purchases of USTs. Net investment flows into French bonds were particularly strong between April and September, and have since remained largely flat.

Figure 18: Japanese investors' cumulative net buying of sovereign bonds, Jan-14 – Jan-15 (€bn)

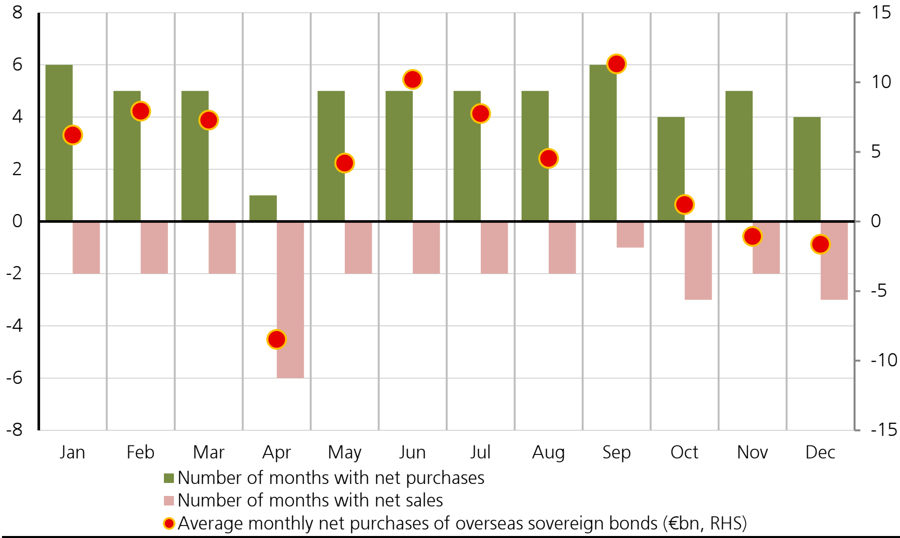


Source: Japan MoF, UBS

In the eight years to 2015, the Japanese investor community have on average been net sellers of overseas bonds in April, the first month of the Japanese fiscal year (Figure 19). This tends to be the time when asset allocation policies for the new year are implemented. If this historical pattern repeats in 2015, it will likely not benefit euro area markets, and could be of particular concern for French bonds[5].

[5] For more on seasonality among Japanese investors' overseas bond purchases, see [Global Rates Commander, 12 April 2013]

Figure 19: The seasonal effect: Average monthly net purchases of overseas sovereign bonds by Japanese investors, 2008-2015



Source: Japan MoF, UBS

Detailed FX-hedged yield matrix

The tables below show the FX-hedged yield for a selection of (benchmark) government bonds for investors in six different domiciles. For example, if a Japanese investor were to purchase a 10yr OAT (French government bond) and hedge their currency exposure via 12m FX forwards, the yield on offer is approximately 0.49% (Figure 22).

Figure 20: FX-hedged yield matrix, 2yr government bonds (as of 11 March 2015)

FX-hedged yield %

Investor domicile

2Y	Bunds	USTs	JGBs	UKTs	Swiss	ACGBs	OATs	DSLs	BTPs	SPGBs	PGBs
Euro area	-0.24	-0.15	0.00	-0.39	0.07	-0.79	-0.16	-0.18	0.17	0.11	0.08
US	0.60	0.69	0.83	0.42	0.90	-0.02	0.68	0.66	1.01	0.95	0.92
Japan	-0.21	-0.12	0.02	-0.37	0.10	-0.76	-0.13	-0.15	0.19	0.14	0.11
UK	0.69	0.81	0.93	0.54	0.98	0.15	0.77	0.75	1.09	1.04	1.01
Switzerland	-1.18	-1.08	-0.95	-1.31	-0.87	-1.77	-1.10	-1.12	-0.77	-0.83	-0.86
Australia	2.42	2.58	2.65	2.25	2.77	1.87	2.50	2.48	2.83	2.77	2.74

Source: UBS, Bloomberg

Currency hedge calculated as implied return from 12m FX fwd points

Figure 21: FX-hedged yield matrix, 5yr government bonds (as of 11 March 2015)

FX-hedged yield %

Investor domicile

5Y	Bunds	USTs	JGBs	UKTs	Swiss	ACGBs	OATs	DSLs	BTPs	SPGBs	PGBs
Euro area	-0.12	0.77	0.09	0.48	0.48	-0.66	0.01	-0.07	0.43	0.47	0.83
US	0.72	1.61	0.92	1.29	1.31	0.11	0.85	0.77	1.27	1.31	1.67
Japan	-0.10	0.80	0.11	0.50	0.51	-0.63	0.04	-0.04	0.46	0.49	0.85
UK	0.81	1.73	1.02	1.41	1.39	0.28	0.94	0.86	1.36	1.39	1.75
Switzerland	-1.06	-0.16	-0.85	-0.44	-0.46	-1.63	-0.93	-1.01	-0.51	-0.48	-0.11
Australia	2.54	3.50	2.74	3.13	3.18	2.00	2.67	2.59	3.09	3.12	3.49

Source: UBS, Bloomberg

Currency hedge calculated as implied return from 12m FX fwd points

Figure 22: FX-hedged yield matrix, 10yr government bonds (as of 11 March 2015)

FX-hedged yield %

Investor domicile

10Y	Bunds	USTs	JGBs	UKTs	Swiss	ACGBs	OATs	DSLs	BTPs	SPGBs	PGBs
Euro area	0.20	1.28	0.39	0.87	0.83	-0.07	0.47	0.25	1.14	1.17	1.63
US	1.04	2.12	1.22	1.68	1.66	0.70	1.31	1.09	1.98	2.01	2.47
Japan	0.22	1.31	0.41	0.89	0.86	-0.04	0.49	0.27	1.17	1.20	1.66
UK	1.13	2.24	1.32	1.80	1.74	0.87	1.40	1.17	2.07	2.10	2.56
Switzerland	-0.74	0.35	-0.55	-0.05	-0.11	-1.05	-0.47	-0.69	0.20	0.23	0.69
Australia	2.86	4.01	3.04	3.51	3.52	2.59	3.13	2.91	3.80	3.83	4.29

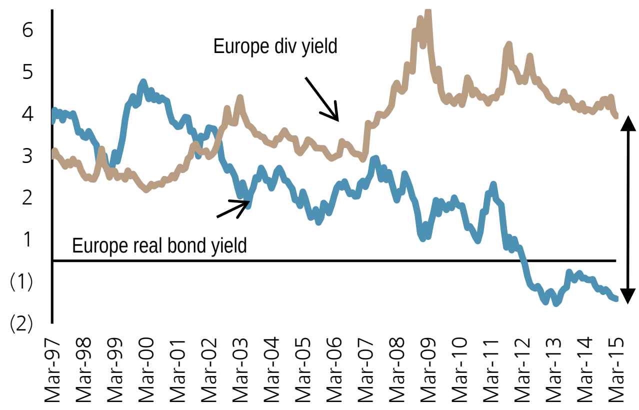
Source: UBS, Bloomberg — Currency hedge calculated as implied return from 12m FX fwd points

Euro area bonds vs Equities – 80% of crisis peak

The arguments for investors to switch out of bonds into equities are compelling[6].

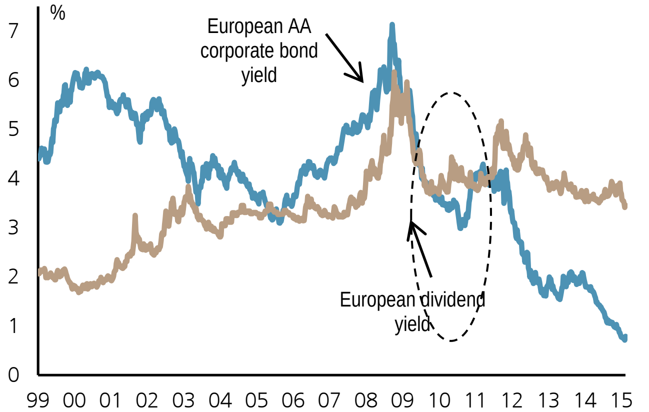
One such obvious argument - but relentless and not to be ignored - is the real yield gap between European dividends and 10 year bund yields. Today the gap is over 80% of the peak gap reached in July 2012 when Draghi stepped in with his "whatever it takes" speech. As an aside - we also show the gap with investment grade credit – it is again near the July 2012 record.

Figure 23: Real yield gap: European div yield vs real bond yield gap is 80% of its crisis peak



Source: UBS, Thomson Datastream

Figure 24: Gap between AA corp bond yield and Dividend yield near the record seen in July 2012

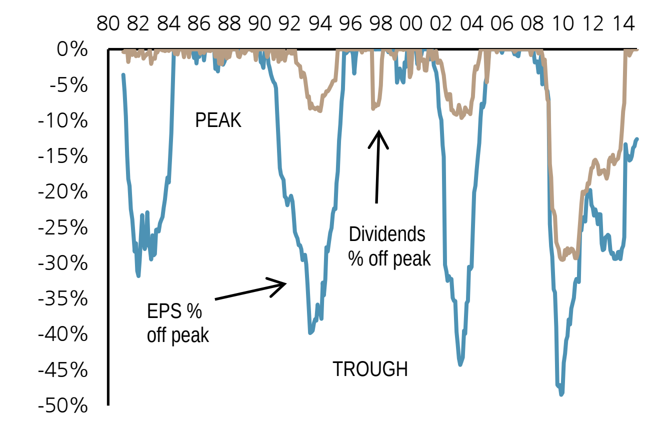


Source: UBS, Thomson Datastream

The equity market may have rallied, but dividends have also climbed back to a five year high (not the crisis peak of 7 or 8 years ago, but a 5 year high). Plus the pay-out ratio is today at 57% only just above long run average of 52%. In a world starved of yield the equities offering in Europe is still very attractive.

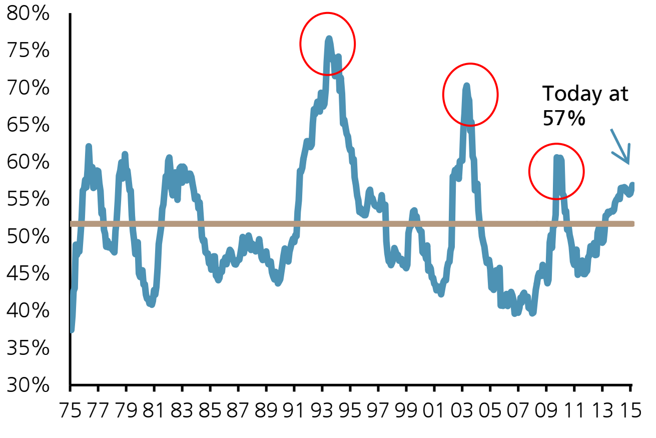
[6] For more on why we think that equities may continue their bull trend, please see "Macro Keys Early days for Europe: 5 crisis gaps left to buy", 16 March 2015

Figure 25: EPS /DPS gap from 5 year peak. Dividends at 5 year high



Source: UBS estimates, MSCI, Thomson Datastream

Figure 26: European Payout ratio – above long run average but not stretched



Source: UBS estimates, MSCI, Thomson Datastream

The historical case: The flow effect does not last long

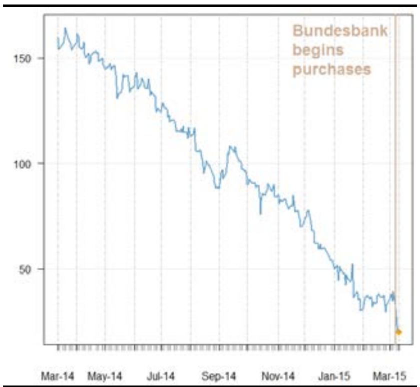
"Until a month ago, nobody had any doubt that public debt, sovereign debt in the euro area, was actually very, very big, and now some people worry that we won't have enough bonds!"

-- ECB President Mario Draghi

ECBsy Market Squeezy - can the data beat the flow?

Our argument, at its core, is that economic fundamentals and market sentiment are the primary determinant of yields in liquid markets. Static supply/demand analyses have failed to predict the direction of yield moves in most recent shocks to net bond supply, and we figure this will be another case to add to the list. The trouble with such analyses is that (a) the aggregate supply is much larger than net new issuance, and (b) a small change in economic conditions can spur and cannibalize demand from current holders, at current prices, at a faster rate than central bank demand is increasing.

Figure 27: Germany 10yr yield



Source: Bloomberg, UBS

The stock and the flow

The argument for lower yields is no doubt alluring – the scale of the ECB's annual buying programme (720 billion) is sufficient to absorb budget deficits across the Euro area (205 billion) several times over. To cover the residual buying flow, the national central banks must purchase 515 billion worth of bonds (5.5% of nominal GDP, or 7% of outstanding marketable sovereign debt) from current owners.

The market is worried that there are few loose sellers, and for the ECB to achieve their goal, they must squeeze yields.

We freely admit there could be a shortage of bonds in the late stages of the programme. But a lot will depend on how the Eurosystem responds to such a shortage. In an environment where dealers are less able to warehouse risk than they were in the past, it would seem that forcing them to quote could have the effect of creating significant distortions in the market. It is clear that the ECB would be deeply uncomfortable purchasing bonds in this way. Not only has the

ECB repeatedly stated that it wants to be market neutral[7], but also there could be potential legal concerns were the ECB to be seen to be holding sovereign borrowing costs artificially low.

The alternative in this scenario would be for the Eurosystem simply to miss its purchase targets. This was exactly what happened in the second Covered Bond Purchase Programme, while in the Securities Markets Programme the ECB let yields rise for extended periods for similar reasons.

Either way, we think that a year is too long a horizon to rely on the notion of "ceteris paribus" for all other factors which determine a fair yield. Many of Europe's hindrances to growth are disappearing – the Euro has fallen 18% against the USD over the last 6 months, 5yr inflation expectations have increased by +50bps since the start of the year, and fiscal austerity is moderating. We expect that by the end of 2015, 10yr bund yields will rise to 90bps.

To further our argument, we show several examples where supply/demand analyses failed to anticipate the direction of bond yields.

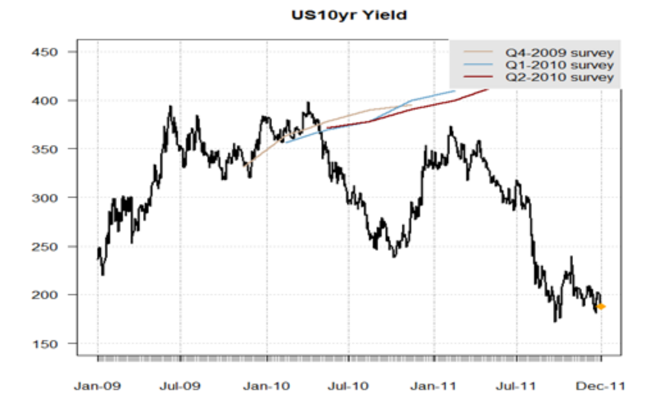
Example 1: The 2009 explosion in US government issuance

Financial markets' panic over deficits peaked in late 2009 / early 2010.

By January 2010, the CBO projected the US budget deficit for fiscal years 2010 and 2011 would be $1.35 trillion and $1 trillion, respectively – nearly a doubling the expectations from a year earlier.

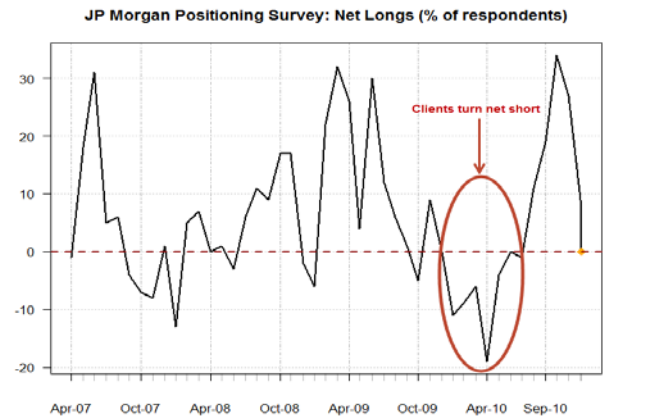
Investors worried that demand for bonds would be insufficiently elastic to absorb the supply of duration. The size of marketable treasury debt would grow by 20% over the next two years; the Fed had stopped purchasing US treasuries; and would do the same for MBS at the end of March.

Figure 28: Deficit panic in the survey of professional forecasters



Source: Bloomberg, Federal Reserve Bank of Philadelphia, UBS

Figure 29: And bonds positioned net short for the first time



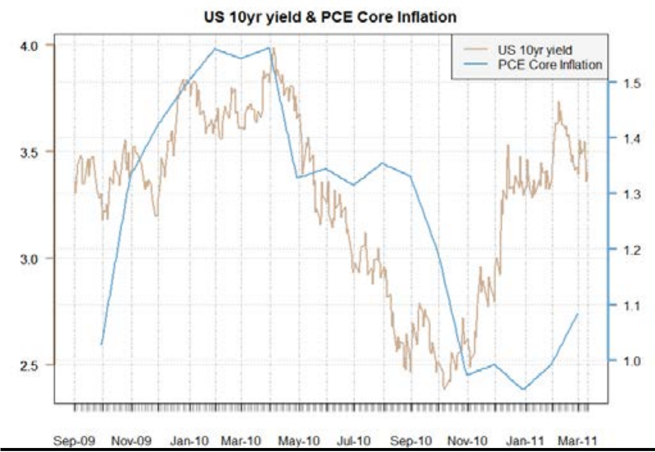
Source: Bloomberg, UBS

The Fed's survey of professional forecasters highlights the depth of supply concerns – banks expected 10yr yields to rise to 4% in each survey. The market agreed – aggregate positioning finally turned net short from Q4 2009 to Q3 2010.

[7] For example: "*The intention is to be market-neutral. The Eurosystem wants to create as little distortion as possible*". - "Q&A on the public sector purchase programme (PSPP)", ECB, 5 March 2015

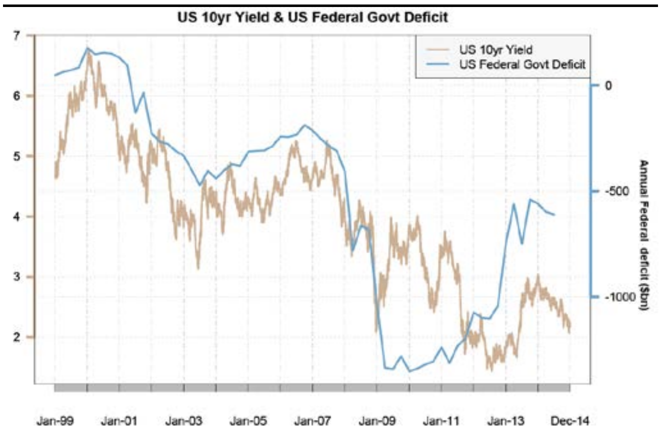
Economic fundamentals won out over supply. As core inflation tumbled towards 1%, the US10yr yield fell below 2.5%, 150bps below survey projections. Looking back, the correlation between the budget deficit and bond yields over the last decade has followed the reverse implications of net supply analyses. The 10yr yield has tended to rise as the budget turns toward surplus and issuance contracts, and fall as issuance widens. Fundamentals dominate everything – a strong economy improves the budget position, and Fed funds expectations.

Figure 30: Macroeconomics won out



Source: Federal Reserve Economic Data (FRED), UBS

Figure 31: As yields fell in spite of the $1trn deficit



Source: Bloomberg, UBS

Example 2: US quantitative easing rounds 1, 2 and 3.

Again, a simple analysis of changes in demand due to Fed QE would have wrongfooted investors. In all three rounds of US QE, yields tended to rise whilst the Fed began adding to bond demand, and fell fairly rapidly as the Fed ceased buying.

Figure 32: US10yr yields tended to rise during QE, and fall once the buying ceased

Source: Federal Reserve Economic Data (FRED), UBS

Figure 33: Mostly due to a recovery in inflation expectations

Source: Federal Reserve Economic Data (FRED), UBS

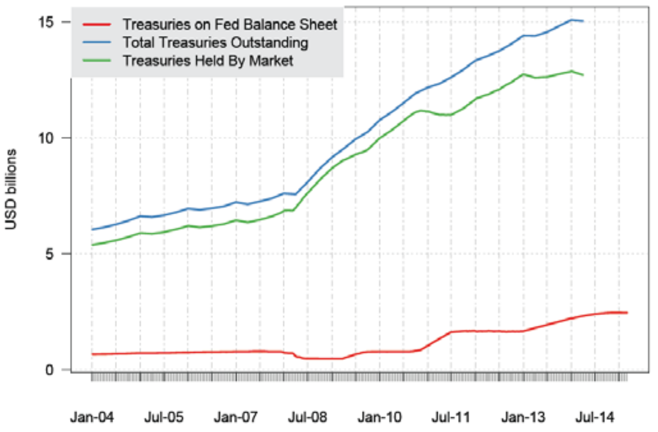
We can see parallels with ECB QE here. Each round of QE was reasonably anticipated by the market (particularly QE2 and QE3), and demand strengthened prior to the Fed's purchases (as has been the case in European bonds).

Further, inflation expectations rose substantially when each QE programme was initiated. The low inflation experience of the past five years might now temper investors' beliefs in central banks' ability to create inflation. Nonetheless, the dramatic fall in the EUR (-12%) since Draghi signaled QE at the start of January should bolster inflation expectations.

Example 3: Bank of Japan quantitative easing

We accept that the ECB's QE programme is perhaps different to the Fed's – after all, no Fed QE programme dominated net issuance and so the total stock of outstanding USTs never declined on a sustained basis.

Figure 34: Fed buying never dominated issuance…



Source: Federal Reserve Economic Data (FRED), UBS

Figure 35: But that did not matter in Japan…

Source: Bloomberg, UBS

Yet the BoJ's experience tells us there is nothing pivotal about a decrease in aggregate supply. Since the start of 2015, the BoJ have bought around ¥8 trillion JGBs per month, while net issuance has averaged just over ¥2 trillion. Yields initially moved lower, rallying 10bps over the first two weeks of the year, but have risen 20bps over the last two months – the largest increase in nearly two years.

The risk case: Greek euro exit

The most significant risk to our bearish call on core euro area bonds is a potential escalation of the Greek crisis, leading to Greek exit or – to a lesser extent – to capital controls. We do not expect an outcome of this kind in our base case scenario, but it is possible and it appears that relations between Greece and its creditors have deteriorated somewhat in the past few weeks.

It is clear that Greek euro exit would drive core European government bond yields lower as a result of capital flight to quality. But we also think that it would have a big impact on economic sentiment in the euro area, thereby also undermining our fundamental case for higher core yields.

While core yields are rallying, of course, peripheral spreads would be widening significantly in our view. Not only would there be flight from bond markets and of bank deposits, but also all governments – including those of the periphery – would have to issue large amounts of bonds in order to finance the recapitalisation of the EFSF and of their national central banks.

As a result, for those investors who hold peripheral bonds in their benchmarks, we would also recommend a move to underweight of duration in those markets as

well. The move higher in peripheral yields would likely dwarf the move lower in core yields after a Greek euro exit[8].

[8] For more on the impact of Greek euro exit on other peripheral markets, please see *"European Rates Comment - Why bond markets are wrong about Greece"*, 23 February 2015

Required Disclosures

This report has been prepared by UBS Limited, an affiliate of UBS AG. UBS AG, its subsidiaries, branches and affiliates are referred to herein as UBS.

For information on the ways in which UBS manages conflicts and maintains independence of its research product; historical performance information; and certain additional disclosures concerning UBS research recommendations, please visit www.ubs.com/disclosures. The figures contained in performance charts refer to the past; past performance is not a reliable indicator of future results. Additional information will be made available upon request. UBS Securities Co. Limited is licensed to conduct securities investment consultancy businesses by the China Securities Regulatory Commission.

Analyst Certification: Each research analyst primarily responsible for the content of this research report, in whole or in part, certifies that with respect to each security or issuer that the analyst covered in this report: (1) all of the views expressed accurately reflect his or her personal views about those securities or issuers and were prepared in an independent manner, including with respect to UBS, and (2) no part of his or her compensation was, is, or will be, directly or indirectly, related to the specific recommendations or views expressed by that research analyst in the research report.

UBS Global Credit Strategy and Research: Rating Definitions
UBS ranks potential investment opportunities within non-government fixed income markets and sectors. Issuers are rated on one or both criteria shown below, and specific securities may be recommended as well.

	UBS Terminology	**Time Horizon**	**Definition**
		Issuer Ratings	
Credit Rating	AAA, AA, A, BBB, BB, B, CCC, CC, C (+/-)	Up to 12 months	UBS' assessment of a company's creditworthiness
Outlook	Positive; Stable; Negative	Up to 6 months	UBS' expected trend in a company's creditworthiness
		Security Recommendations	
Bond Recommendation	Outperform; Marketperform; Underperform	Up to 3 months	A corporate bond's expected relative performance versus a defined reference
CDS Recommendation	Buy Protection; Sell Protection	Up to 3 months	Recommendation to hedge a company's creditworthiness

Note: Recommendations for periods under 3 months are defined as 'Tactical', as in Tactical Outperform or Tactical Underperform. The UBS credit rating may be modified by the addition of a plus (+) or minus (-) sign where applicable to show relative standing within the major categories.
Source: UBS

Company Disclosures

Issuer Name	Credit Rating	Outlook
Commonwealth of Australia[2, 4]	-	-
Federal Republic of Germany	-	-
French Republic[2, 4]	-	-
Greece	-	-
Ireland Government Bond[2, 4, 5]	-	-
Japan	-	-
Kingdom of Belgium[16, 22]	-	-
Kingdom of the Netherlands	-	-
Portuguese Republic	-	-
Republic of Italy[2, 4, 5]	-	-
Spain	-	-
United Kingdom of Great Britain[16, 22]	-	-
United States[22]	-	-

Source: UBS. Ratings in this table are the most current published ratings prior to this report.

2. UBS AG, its affiliates or subsidiaries has acted as manager/co-manager in the underwriting or placement of securities of this company/entity or one of its affiliates within the past 12 months.
4. Within the past 12 months, UBS AG, its affiliates or subsidiaries has received compensation for investment banking services from this company/entity.
5. UBS AG, its affiliates or subsidiaries expect to receive or intend to seek compensation for investment banking services from this company/entity within the next three months.
16. UBS Limited has entered into an arrangement to act as a liquidity provider and/or market maker in the financial instruments of this company.
22. UBS AG, its affiliates or subsidiaries held other significant financial interests in this company/entity as of last month`s end (or the prior month`s end if this report is dated less than 10 working days after the most recent month`s end).

Global Disclaimer

This document has been prepared by UBS Limited, an affiliate of UBS AG. UBS AG, its subsidiaries, branches and affiliates are referred to herein as UBS.

This document is for distribution only as may be permitted by law. It is not directed to, or intended for distribution to or use by, any person or entity who is a citizen or resident of or located in any locality, state, country or other jurisdiction where such distribution, publication, availability or use would be contrary to law or regulation or would subject UBS to any registration or licensing requirement within such jurisdiction. It is published solely for information purposes; it is not an advertisement nor is it a solicitation or an offer to buy or sell any financial instruments or to participate in any particular trading strategy. No representation or warranty, either expressed or implied, is provided in relation to the accuracy, completeness or reliability of the information contained in this document ('the Information'), except with respect to Information concerning UBS. The Information is not intended to be a complete statement or summary of the securities, markets or developments referred to in the document. UBS does not undertake to update or keep current the Information. Any opinions expressed in this document may change without notice and may differ or be contrary to opinions expressed by other business areas or groups of UBS. Any statements contained in this report attributed to a third party represent UBS's interpretation of the data, information and/or opinions provided by that third party either publicly or through a subscription service, and such use and interpretation have not been reviewed by the third party.

Nothing in this document constitutes a representation that any investment strategy or recommendation is suitable or appropriate to an investor's individual circumstances or otherwise constitutes a personal recommendation. Investments involve risks, and investors should exercise prudence and their own judgement in making their investment decisions. The financial instruments described in the document may not be eligible for sale in all jurisdictions or to certain categories of investors. Options, derivative products and futures are not suitable for all investors, and trading in these instruments is considered risky. Mortgage and asset-backed securities may involve a high degree of risk and may be highly volatile in response to fluctuations in interest rates or other market conditions. Foreign currency rates of exchange may adversely affect the value, price or income of any security or related instrument referred to in the document. For investment advice, trade execution or other enquiries, clients should contact their local sales representative.

The value of any investment or income may go down as well as up, and investors may not get back the full (or any) amount invested. Past performance is not necessarily a guide to future performance. Neither UBS nor any of its directors, employees or agents accepts any liability for any loss (including investment loss) or damage arising out of the use of all or any of the Information.

Any prices stated in this document are for information purposes only and do not represent valuations for individual securities or other financial instruments. There is no representation that any transaction can or could have been effected at those prices, and any prices do not necessarily reflect UBS's internal books and records or theoretical model-based valuations and may be based on certain assumptions. Different assumptions by UBS or any other source may yield substantially different results.

This document and the Information are produced by UBS as part of its research function and are provided to you solely for general background information. UBS has no regard to the specific investment objectives, financial situation or particular needs of any specific recipient. In no circumstances may this document or any of the Information be used for any of the following purposes:

(i) valuation or accounting purposes;

(ii) to determine the amounts due or payable, the price or the value of any financial instrument or financial contract; or

(iii) to measure the performance of any financial instrument.

By receiving this document and the Information you will be deemed to represent and warrant to UBS that you will not use this document or any of the Information for any of the above purposes or otherwise rely upon this document or any of the Information.

Research will initiate, update and cease coverage solely at the discretion of UBS Investment Bank Research Management. The analysis contained in this document is based on numerous assumptions. Different assumptions could result in materially different results. The analyst(s) responsible for the preparation of this document may interact with trading desk personnel, sales personnel and other parties for the purpose of gathering, applying and interpreting market information. UBS relies on information barriers to control the flow of information contained in one or more areas within UBS into other areas, units, groups or affiliates of UBS. The compensation of the analyst who prepared this document is determined exclusively by research management and senior management (not including investment banking). Analyst compensation is not based on investment banking revenues; however, compensation may relate to the revenues of UBS Investment Bank as a whole, of which investment banking, sales and trading are a part.

For financial instruments admitted to trading on an EU regulated market: UBS AG, its affiliates or subsidiaries (excluding UBS Securities LLC) acts as a market maker or liquidity provider (in accordance with the interpretation of these terms in the UK) in the financial instruments of the issuer save that where the activity of liquidity provider is carried out in accordance with the definition given to it by the laws and regulations of any other EU jurisdictions, such information is separately disclosed in this document. For financial instruments admitted to trading on a non-EU regulated market: UBS may act as a market maker save that where this activity is carried out in the US in accordance with the definition given to it by the relevant laws and regulations, such activity will be specifically disclosed in this document. UBS may have issued a warrant the value of which is based on one or more of the financial instruments referred to in the document. UBS and its affiliates and employees may have long or short positions, trade as principal and buy and sell in instruments or derivatives identified herein; such transactions or positions may be inconsistent with the opinions expressed in this document.

United Kingdom and the rest of Europe: Except as otherwise specified herein, this material is distributed by UBS Limited to persons who are eligible counterparties or professional clients. UBS Limited is authorised by the Prudential Regulation Authority and regulated by the Financial Conduct Authority and the Prudential Regulation Authority. **France:** Prepared by UBS Limited and distributed by UBS Limited and UBS Securities France S.A. UBS Securities France S.A. is regulated by the ACPR (Autorité de Contrôle Prudentiel et de Résolution) and the Autorité des Marchés Financiers (AMF). Where an analyst of UBS Securities France S.A. has contributed to this document, the document is also deemed to have been prepared by UBS Securities France S.A. **Germany:** Prepared by UBS Limited and distributed by UBS Limited and UBS Deutschland AG. UBS Deutschland AG is regulated by the Bundesanstalt fur Finanzdienstleistungsaufsicht (BaFin). **Spain:** Prepared by UBS Limited and distributed by UBS Limited and UBS Securities España SV, SA. UBS Securities España SV, SA is regulated by the Comisión Nacional del Mercado de Valores (CNMV). **Turkey:** Distributed by UBS Limited. No information in this document is provided for the purpose of offering, marketing and sale by any means of any capital market instruments and services in the Republic of Turkey. Therefore, this document may not be considered as an offer made or to be made to residents of the Republic of Turkey. UBS AG is not licensed by the Turkish Capital Market Board under the provisions of the Capital Market Law (Law No. 6362). Accordingly, neither this document nor any other offering material related to the instruments/services may be utilized in connection with providing any capital market services to persons within the Republic of Turkey without the prior approval of the Capital Market Board. However, according to article 15 (d) (ii) of the Decree No. 32, there is no restriction on the purchase or sale of the securities abroad by residents of the Republic of Turkey. **Poland:** Distributed by UBS Limited (spolka z ograniczona odpowiedzialnoscia) Oddzial w Polsce regulated by the Polish Financial Supervision Authority. Where an analyst of UBS Limited (spolka z ograniczona odpowiedzialnoscia) Oddzial w Polsce has contributed to this document, the document is also deemed to have been prepared by UBS Limited (spolka z ograniczona odpowiedzialnoscia) Oddzial w Polsce. **Russia:** Prepared and distributed by UBS Bank (OOO). **Switzerland:** Distributed by UBS AG to persons who are institutional investors only. UBS AG is regulated by the Swiss Financial Market Supervisory Authority (FINMA). **Italy:** Prepared by UBS Limited and distributed by UBS Limited and UBS Italia Sim S.p.A. UBS Italia Sim S.p.A. is regulated by the Bank of Italy and by the Commissione Nazionale per le Società e la Borsa (CONSOB). Where an analyst of UBS Italia Sim S.p.A. has contributed to this document, the document is also deemed to have been prepared by UBS Italia Sim S.p.A. **South Africa:** Distributed by UBS South Africa (Pty) Limited (Registration No. 1995/011140/07), an authorised user of the JSE and an authorised Financial Services Provider (FSP 7328). **Israel:** This material is distributed by UBS Limited. UBS Limited is authorised by the Prudential Regulation Authority and regulated by the Financial Conduct Authority and the Prudential Regulation Authority. UBS Securities Israel Ltd is a licensed Investment Marketer that is supervised by the Israel Securities Authority (ISA). UBS Limited and its affiliates incorporated outside Israel are not licensed under the Israeli Advisory Law. UBS Limited is not covered by insurance as required from a licensee under the Israeli Advisory Law. UBS may engage among others in issuance of Financial Assets or in distribution of Financial Assets of other issuers for fees or other benefits. UBS Limited and its affiliates may prefer various Financial Assets to which they have or may have Affiliation (as such term is defined under the Israeli Advisory Law). Nothing in this Material should be considered as investment advice under the Israeli Advisory Law. This Material is being issued only to and/or is directed only at persons who are Eligible Clients within the meaning of the Israeli Advisory Law, and this material must not be relied on or acted upon by any other persons. **Saudi Arabia:** This document has been issued by UBS AG (and/or any of its subsidiaries, branches or affiliates), a public company limited by shares, incorporated in Switzerland with its registered offices at Aeschenvorstadt 1, CH-4051 Basel and Bahnhofstrasse 45, CH-8001 Zurich. This publication has been approved by UBS Saudi Arabia (a subsidiary of UBS AG), a Saudi closed joint stock company incorporated in the Kingdom of Saudi Arabia under commercial register number 1010257812 having its registered office at Tatweer Towers, P.O. Box 75724, Riyadh 11588, Kingdom of Saudi Arabia. UBS Saudi Arabia is authorized and regulated by the Capital Market Authority to conduct securities business under license number 08113-37. **Dubai:** The information distributed by UBS AG Dubai Branch is intended for Professional Clients only and is not for further distribution within the United Arab Emirates. **United States:** Distributed to US persons by either UBS Securities LLC or by UBS Financial Services Inc., subsidiaries of UBS AG; or by a group, subsidiary or affiliate of UBS AG that is not registered as a US broker-dealer (a **'non-US affiliate'**) to major US institutional investors only. UBS Securities LLC or UBS Financial Services Inc. accepts responsibility for the content of a document prepared by another non-US affiliate when distributed to US persons by UBS Securities LLC or UBS Financial Services Inc. All transactions by a US person in the securities mentioned in this document must be effected through UBS Securities LLC or UBS Financial Services Inc., and not through a non-US affiliate. **Canada:** Distributed by UBS Securities Canada Inc., a registered investment dealer in Canada and a Member-Canadian Investor Protection Fund, or by another affiliate of UBS AG that is registered to conduct business in Canada or is otherwise exempt from registration. **Brazil:** Except as otherwise specified herein, this material is prepared by UBS Brasil CCTVM S.A. to persons who are eligible investors residing in Brazil, which are considered to be: (i) financial institutions, (ii) insurance firms and investment capital companies, (iii) supplementary pension entities, (iv) entities that hold financial investments higher than R$300,000.00 and that confirm the status of qualified investors in written, (v) investment funds, (vi) securities portfolio managers and securities consultants duly authorized by Comissão de Valores Mobiliários (CVM), regarding their own investments, and (vii) social security systems created by the Federal Government, States, and Municipalities. **Hong Kong:** Distributed by UBS Securities Asia Limited and/or UBS AG, Hong Kong Branch. **Singapore:** Distributed by UBS Securities Pte. Ltd. [MCI (P) 016/09/2014 and Co. Reg. No.: 198500648C] or UBS AG, Singapore Branch. Please contact UBS Securities Pte. Ltd., an exempt financial adviser under the Singapore Financial Advisers Act (Cap. 110); or UBS AG, Singapore Branch, an exempt financial adviser under the Singapore Financial Advisers Act (Cap. 110) and a wholesale bank licensed under the Singapore Banking Act (Cap. 19) regulated by the Monetary Authority of Singapore, in respect of any matters arising from, or in connection with, the analysis or document. The recipients of this document represent and warrant that they are accredited and institutional investors as defined in the Securities and Futures Act (Cap. 289). **Japan:** Distributed by UBS Securities Japan Co., Ltd. to professional investors (except as otherwise permitted). Where this document has been prepared by UBS Securities Japan Co., Ltd., UBS Securities Japan Co., Ltd. is the author, publisher and distributor of the document. Distributed by UBS AG, Tokyo Branch to Professional Investors (except as otherwise permitted) in relation to foreign exchange and other banking businesses when relevant. **Australia:** Clients of UBS AG: Distributed by UBS AG (Holder of Australian Financial Services License No. 231087). Clients of UBS Securities Australia Ltd: Distributed by UBS Securities Australia Ltd (Holder of Australian Financial Services License No. 231098). Clients of UBS Wealth Management Australia Ltd: Distributed by UBS Wealth Management Australia Ltd (Holder of Australian Financial Services Licence No. 231127). This Document contains general information and/or general advice only and does not constitute personal financial product advice. As such, the Information in this document has been prepared without taking into account any investor's objectives, financial situation or needs, and investors should, before acting on the Information, consider the appropriateness of the Information, having regard to their objectives, financial situation and needs. If the Information contained in this document relates to the acquisition, or potential acquisition of a particular financial product by a 'Retail' client as defined by section 761G of the Corporations Act 2001 where a Product Disclosure Statement would be required, the retail client should obtain and consider the Product Disclosure Statement relating to the product before making any decision about whether to acquire the product. The UBS Securities Australia Limited Financial Services Guide is available at: www.ubs.com/ecs-research-fsg. **New Zealand:** Distributed by UBS New Zealand Ltd. The information and recommendations in this publication are provided for general information purposes only. To the extent that any such information or recommendations constitute financial advice, they do not take into account any person's particular financial situation or goals. We recommend that recipients seek advice specific to their circumstances from their financial advisor. **Korea:** Distributed in Korea by UBS Securities Pte. Ltd., Seoul Branch. This document may have been edited or contributed to from time to time by affiliates of UBS Securities Pte. Ltd., Seoul Branch. **Malaysia:** This material is authorized to be distributed in Malaysia by UBS Securities Malaysia Sdn. Bhd (Capital Markets Services License No.: CMSL/A0063/2007). This material is intended for professional/institutional clients only and not for distribution to any retail clients. **India:** Prepared by UBS Securities India Private Ltd. (Corporate Identity Number U67120MH1996PTC097299) 2/F, 2 North Avenue, Maker Maxity, Bandra Kurla Complex, Bandra (East), Mumbai (India) 400051. Phone: +912261556000 SEBI Registration Numbers: NSE (Capital Market Segment): INB230951431, NSE (F&O Segment) INF230951431, BSE (Capital Market Segment) INB010951437.

The disclosures contained in research documents produced by UBS Limited shall be governed by and construed in accordance with English law.

UBS