



Investment Update January 2015

Investment Headlines & Comment

- **Eurozone** deflation, and Greece seeks cancellation of some debt.
- **Switzerland** scraps its Euro cap, triggering a rapid appreciation.
- **Long gilts** produce another huge return, as expected inflation falls.

Feature Section

This month we consider the fashionable concept of “value at risk” (VaR). This has been around for a long time for insurance companies and banks, as part of their stress-testing processes, but it is now quoted by LDI advocates as a downside-risk measure (and hence as an incentive to adopt LDI strategies so as to minimize the VaR), and indeed the UK Pensions Regulator is now asking about VaR on scheme returns. It is usually quoted in the form of “there is only a 5% probability that the deficit measured on basis X at time T will be worse than £Y”, but is VaR remotely well defined?

Our understanding is that most VaR models’ outputs are driven by extrapolating past bond market volatility, and adopting a largely symmetric view of risk regardless of the starting level of bond yields. In contrast, we would tend to think that unusually high or low starting conditions might warrant an asymmetric approach, and hence some element of yield reversion. (This concept is relevant given the 2014 slump in UK government bond yields.) We believe the VaR calculated can be very sensitive to the particular asset model used, whereas VaR outputs are simply being quoted as gospel. The question is, how sensitive are they?

To explore this, we built a simple model for the real yield on a (notional) zero-coupon 30-year Index-Linked Gilt, with it being held by a pension scheme in respect of a single 40-year cashflow (so we are assuming the scheme has invested shorter-term than its liabilities). The scheme is assumed to start as 100% funded on an ILG basis just to make the numbers easier to follow. The starting real yield of -0.7% reflects end-2014 conditions, and as an example, we assume eventual reversion to a long-term real yield level of 1% (this is a very subjective parameter!). Figure 1 below shows the 1-year 5% VaR output, as a trade-off between the speed of reversion (from 0 = no reversion, through to 1 = instant reversion), and the degree of randomness of asset volatility (note that this is expressed in terms of real yield, *not* investment return). For this factor, a zero figure is deterministic, and a 0.5% figure for the yield represents around 15% volatility for the asset return. Over the last 5 years, the variability of ILG yields has been 1.4%, but over longer periods the figures are much higher because of the sustained drop in yields (see Figure 1 in our [September 2014](#) edition).

Figure 1: 5% VaR output - Trade-off between reversion and volatility (1-year projection)

Reversion rate	Std Dev randomness (of yield %, not of return)															
	0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1	1.1	1.2	1.3	1.4	
0%	100.0%	98.3%	96.6%	95.2%	93.7%	91.9%	90.1%	89.5%	87.5%	86.5%	84.7%	83.5%	81.8%	79.9%	78.9%	
20%	103.5%	101.8%	100.1%	98.3%	96.8%	95.6%	93.6%	91.9%	90.3%	89.4%	88.3%	86.5%	84.3%	83.5%	82.3%	
40%	107.1%	105.3%	103.4%	101.8%	99.9%	99.1%	96.5%	95.8%	94.2%	91.5%	91.6%	89.9%	87.7%	84.7%	85.8%	
60%	110.8%	109.1%	107.3%	105.0%	103.5%	101.8%	100.4%	99.1%	97.5%	95.3%	93.9%	90.8%	90.1%	88.7%	89.3%	
80%	114.6%	112.7%	110.8%	109.3%	107.4%	105.8%	103.4%	103.2%	100.3%	98.1%	97.8%	95.0%	93.4%	92.3%	90.5%	
100%	118.5%	116.5%	114.7%	112.7%	111.1%	109.3%	107.3%	106.2%	103.2%	102.4%	101.3%	99.4%	97.7%	95.2%	93.5%	

The top-left corner of 100% is as expected for a deterministic model with no movement from the start value. The bottom-left corner of 118.5% fits with real yields rising, and the pension scheme gaining from being invested short. Where it gets interesting is if you choose even a slow reversion rate, and then look along the row as the randomness factor increases. For example, with a reversion rate of 20%, volatilities of 0.5% and 1% give VaRs of 95.6% and 88.3% respectively. Similarly, with zero reversion, volatilities of 0.5% and 1% give VaRs of 91.9% and 84.7% respectively. So, the range of outcomes persists even if no assumption is made about yield reversion. This is a clear example of how model-dependent VaR is, and why there should be considerable scrutiny of any model used.

As a final aside, the modelling of future gilt yields seems well nigh impossible at present with the Bank of England QE portfolio sitting there in the background. If (or when) some of that gets released back into the market, in a bid to head off increased inflation (not that this is appearing yet), then even if some of this is offset by pension schemes matching off more of their liabilities, gilt yields could get pushed up.



Asset Returns and Financial Measures [in Sterling unless marked otherwise]

The cells in bold with light shading show the best and worst performing asset classes from each column. The commodities and \$-based and unhedged-£-conversion hedge fund returns are excluded from that.

[NB Future returns cannot be inferred from this table alone, but coupled with other items within *Update*, readers can make inferences as to whether they should be higher or lower than the past returns shown below.]

Table 1: Investment Data to 31 January 2015

Asset Class	1 month (%)	3 months (%)	12 months (%)	3 years (% p.a.)	5 years (% p.a.)	10 years (% p.a.)	20 years (% p.a.)
UK Equities	2.6	3.9	7.1	11.1	10.1	7.7	8.1
Overseas Equities	2.3	4.8	18.5	14.2	12.0	9.6	8.0
US Equities	0.8	5.8	24.6	19.5	17.1	10.4	8.6
Europe ex UK Equities	4.1	4.1	6.1	12.7	7.4	8.0	9.9
Japan Equities	6.5	8.2	12.8	11.2	7.4	5.2	0.8
Pacific ex Japan Equities	5.5	4.7	21.4	8.3	9.0	12.5	7.7
Emerging Markets	4.4	1.2	15.5	2.6	4.8	11.3	7.0
UK Long-dated Gilts	9.0	19.1	33.3	9.7	12.6	8.5	9.2
UK Long-dated Corp. Bonds	8.7	15.3	26.0	12.5	11.7	7.7	-
UK Over 5 Yrs Index-Linked Gilts	5.0	12.7	25.2	8.6	11.6	8.7	8.5
High Yield (Global)	2.8	2.4	8.2	8.8	9.4	10.1	-
Overseas Bonds	4.1	5.6	8.0	0.1	3.1	5.8	5.6
Property *	1.6	4.4	19.3	10.6	10.9	5.8	8.5
Cash	0.0	0.1	0.5	0.6	0.7	2.6	4.1
Commodities £-converted	-4.0	-24.2	-31.1	-14.3	-5.2	-4.0	1.9
Hedge Funds original \$ basis *	-0.2	0.2	3.0	6.1	4.6	5.1	8.8
Illustrative £-converted version *	0.2	4.1	9.4	6.0	5.3	7.3	8.8
Euro relative to Sterling	-3.2	-4.1	-8.4	-3.3	-2.8	0.8	-
US \$ relative to Sterling	3.8	6.5	9.4	1.7	1.3	2.3	0.3
Japanese Yen relative to Sterling	6.0	1.7	-5.0	-12.0	-3.8	1.0	-0.6
Sterling trade weighted	1.0	1.0	3.2	2.8	1.7	-1.3	0.2
Price Inflation (RPI) *	0.2	0.0	1.6	2.5	3.4	3.1	2.9
Price Inflation (CPI) *	0.0	-0.2	0.5	1.7	2.6	2.6	2.1
Price Inflation (RPIX) *	0.2	0.0	1.7	2.5	3.4	3.3	2.9
Earnings Inflation **	-0.5	0.1	1.7	1.2	1.6	2.5	3.2
All Share Capital Growth	2.5	3.4	3.6	7.3	6.4	4.0	4.6
Net Dividend Growth	0.1	0.9	0.8	6.5	6.0	4.9	-
Earnings Growth	-0.9	-7.2	-5.9	-6.4	8.8	4.1	4.7

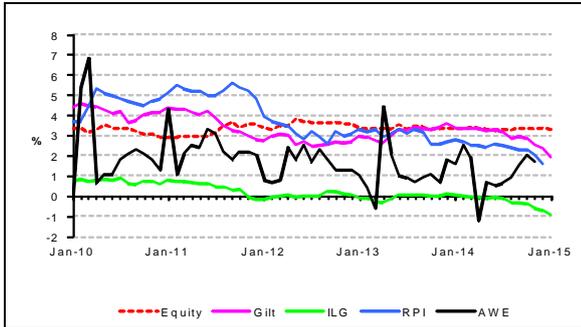
Note: All market returns are total returns for pension funds with income reinvested monthly. Indices used are as follows:

- UK Equities (incl. dividends and earnings) – FT-A All Share.
- Overseas Equities (incl. regions) – blend of FT All-World / World subindices
- Emerging Markets from MSCI US \$ based total return index (overall Index to 31 Oct 2001, Free Index from 1 Nov 2001 to take account of foreign investment restrictions), conversion to UK £ by J&A.
- UK Bonds – FT-A indices (Gilts Over 15 Years, ILG Over 5 Years)
- UK Corporate Bonds – iBoxx Non-Gilt **Over 15 Year** index (all credit ratings combined)
- High Yield – Merrill Lynch Global, £ Unhedged
- Overseas Bonds – JP Morgan Traded Unhedged World ex UK
- Property – IPD Monthly Index
- Commodities – GSCI Total Return, converted to UK £ by J&A
- Hedge Funds Composite – HFRI US \$ based total return index plus converted to UK £ by J&A. NB A smooth “cash+x%” return will only be shown in the base ‘hedged’ currency, here the US \$.
- Cash – an indicative index based on the three-month London Interbank Sterling mid-rate, calculated internally by J&A
- Price and earnings inflation – RPI, CPI, RPIX, and Average Weekly Earnings (whole economy, not seasonally adjusted, latest provisional data)
- Currency data – London close, from the Financial Times
- * denotes data lagged by 1 month, ** by 2 months – these reflect the later publication dates of these data items.



Yields and Yield Gaps

Figure 2: Yields, Inflation and Yield Gaps



The yield gap is a measure of expected average future inflation, derived as long bond yield minus ILG yield.

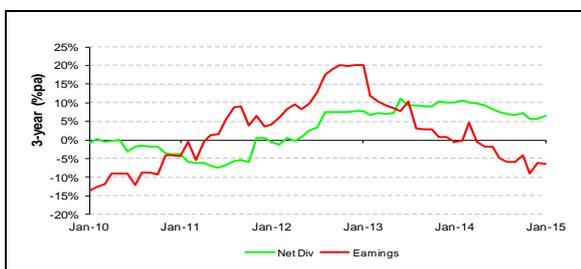
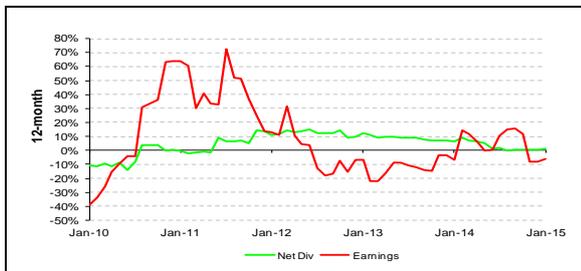


The gap gives a current expectation now just below 3% for longer-term inflation + risk premium for gilts, relative to index-linked gilts.

Growth in Earnings and Dividends

These charts show movements in rolling 12-month and 3-year dividend and earnings growth for UK Equities over the last 5 years. [NB the charts have different scales]

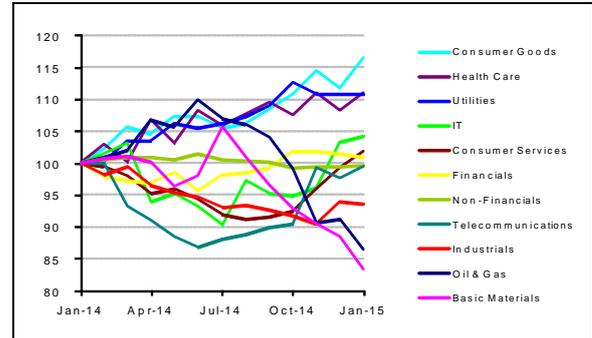
Figure 3: Dividend & Earnings Growth



Sources for charts on this page:
Financial Times, Office for National Statistics, J&A

UK Equity Sector Returns

Figure 4a: Sectors relative to All Share



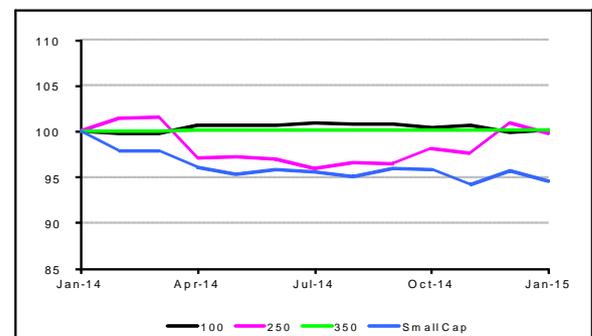
Note: Sector labels for relative lines are in end-value order

There was a rise this month in the rolling 12-month sector dispersion (from 25% to 33%).

(% absolute return)	1 mth	3 mth	12 mth
Oil & Gas	-2.6	-9.4	-7.4
Basic Materials	-3.5	-6.9	-10.9
Industrials	2.1	5.9	0.1
Consumer Goods	7.0	9.2	24.8
Health Care	5.3	7.3	18.9
Consumer Services	5.3	14.6	9.1
Telecommunications	4.6	14.3	6.6
Utilities	2.6	2.2	18.8
Non-Financials	2.8	4.2	6.7
Financials	2.2	3.0	8.2
IT	3.5	14.0	11.6
All Share	2.6	3.9	7.1

UK Equity Size Returns

Figure 4b: Size groups relative to All Share



Mid and Small Cap both fell slightly in relative terms this month.

FRS17 volatility indicator

Now discontinued, but available on request.



Bond market information

Figure 5: £ Non-Gilt Credit Margins

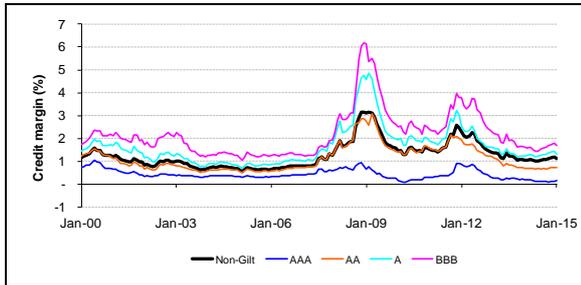


Table 2a: Over 15 Yr Corporate Yields & Margins

Month End	iBoxx Corp AA Y'ld (%)	FT 20 yr Gilt (%)	Margin (%)
Aug '14	3.70	2.86	0.84
Sep '14	3.80	2.95	0.85
Oct '14	3.76	2.85	0.91
Nov '14	3.53	2.55	0.98
Dec '14	3.38	2.38	1.00
Jan '15	2.82	1.93	0.89

Tables 2b, 2c: £ Market Size (£bn) and Maturity

Category	Mkt Val @ Jan 15 & 12, 09			Weight (%)
	Jan 15	Jan 12	09	
Gilts (38)	1,279	1,018	476	69.3
Non Gilts (1,030)	567	474	392	30.7
AAA (118)	101	123	147	5.5
AA (176)	95	67	57	5.1
A (351)	188	162	122	10.2
BBB (385)	183	123	63	9.9

Category	Mkt Val @ Jan 15, & 12		W't (%)	Dur'n (yrs)
Gilts (38)	1,279	1,018	69.3	11.0
< 5 Yrs (10)	328	278	17.8	2.8
5-15 Yrs (12)	399	337	21.6	7.2
> 15 Yrs (16)	552	402	29.9	18.7
Non Gilts (1,030)	567	474	30.7	8.7
< 5 Yrs (323)	148	123	8.0	2.8
5-15 Yrs (440)	243	203	13.2	7.8
> 15 Yrs (267)	176	148	9.6	14.9

£ Gilt Market “main” Issuance

- £3.75bn 2% 2020 (1.42x, 1.17%, Dec 14)
 - £3.02bn 2¾% 2024 (1.58x, 1.62%, Nov 14)
 - £1.89bn 4½% 2034 (1.50x, 2.07%, May 14)
 - £1.04bn ILG 1/8% 2044 (1.94x, r.y -0.74%, May 14)
 - £3.00bn ILG 1/8% 2058 (3.63x, r.y -0.90%, Jul 14)
- Note: Issuance amounts are nominals.*

Tables 2d, 2e: € Market Size and Maturity (Jan 15)

Category	Mkt Val (€bn)	Weight (%)
Sovereigns (312)	5,633	61.0
Non Sovereigns	3,600	39.0
AAA (549)	1,025	11.1
AA (492)	865	9.4
A (788)	873	9.5
BBB (831)	836	9.1

Category	Mkt Val (€bn)	Weight (%)
1 – 3 Yrs (794)	2,163	23.4
3 – 5 Yrs (713)	1,853	20.1
5 – 7 Yrs (640)	1,591	17.2
7 – 10 Yrs (542)	1,689	18.3
10+ Yrs (283)	1,936	21.0

Table 2f: Breakdown of £ Index-Linked Market

Category (Number of issues)	Mkt Val (£bn @ Jan 15 & 12)		W't (%)	Dur'n (yrs)
Gilts (24)	504	339	93.1	21.1
< 5 Yrs (3)	52	49	9.6	-
5 – 15 Yrs (6)	131	88	24.2	-
> 15 Yrs (15)	321	202	59.4	29.0
Non Gilts (40)	37	29	6.9	17.6

Table 2g: High Yield bond yields (BB-B indices)

Month End	US (%)	Euro (%)	Sterling (%)
Jul '14	5.55	4.04	5.72
Aug '14	5.32	3.94	5.63
Sep '14	5.80	4.05	5.87
Oct '14	5.59	4.08	6.27
Nov '14	5.83	3.91	6.19
Dec '14	6.16	4.00	6.15
Jan '15	6.07	3.81	5.83

Sources: Barclays Capital, DMO, iBoxx, J&A, MLX

