E-A-R©'s

Quarterly Multi-Asset Note

(Bonds, FX, Commodities and Equities)

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Investment and trading strategies typically fulfill various functions, such as capital formation and liquidity generation. In this multi – asset class note, EAR asserts that the battle for excess returns lies in assuming risks that extend beyond general market risk. That is EAR's style to making its pile from erratic markets; the road less travelled by!

Nominal Bonds

Z- Signal on Government Bonds

Trading in bonds presents an appealing case so as to avoid picking any point along the yield curve. Rather than speculating whether interest rates will march up or down; some detailed analysis could zoom into the shape and slope of the yield curve. It is through such that mispriced securities can be detected – trading on market dislocation or inefficiencies. EAR's proposition opines that trading on market dislocation can be explored through relative value analysis (RVA) and a strategy that cuts across different market conditions, rooted in spread and convergence trades. The latter makes for an interesting tool with which to peel some layers that sprawl across some of the "rich-cheap" points on the South African nominal curve.

The "rich-cheap" analysis is enhanced by means of a quantitative analysis of term spreads along the curve. The spreads can extend to some "reference" corporate curve. In this regard, EAR applies the Z-Signal. The technique provides signals of short or long positions to take in the market. In this regard, short and long positions can be unwound based on some latest change in the spread between two bonds. Further, EAR presents the technique with some empirical volatility band. Often, investors and traders are confronted with a myriad of challenges; which segment of the curve to play in? What about those who would like to employ some pair trading strategy? The modified Z-Signal could therefore reflect the areas along the curve that are "rich" or overly expensive and those that look cheap. This could further take advantage of the slope of the yield curve. Accordingly, a Z-Signal of less than 1 implies richness on that particular point along the curve whilst a Z-Signal of more than 1 implies cheapness. A bond would be regarded as properly priced if the Z-Signal equals 1.

Virtually, the yield curve is affected by many other movements apart from the slope. For instance, there is an inflation premium that investors price in along the yield curve and this reflects some inflation expectations. Further the South African yield curve recently came under immense pressure due to some volatility premium that broadly reflects the price sensitivity of longer dated bonds to changes in bond yields. Poor economic performance has further weighed heavily on the South African yield curve. It is under such circumstances that the risk premium levied by investors would be more pronounced in longer dated bonds. How should investors navigate the nominal curve and some of its inherent term spreads? The modified Z-Signal of 1, which relates to the R2023/R204 spread; suggests that the R2023 bond, which matures in year 2023, is fairly valued and presents some upside potential. On the other hand, the R209 which matures in 2036 does not present any buying opportunity. Instead, one could short the R209 and long the R2023. This is confirmed by the Z-Signal of 0.40. Quite evidently, the longer end of the curve is under pressure due to some elevated volatility premium. Moreover, the ultra-short end of the curve where the R204 sits could soon give up a bit of some recent gains as risks to the sovereign's credit ratings continue to linger on. Such risks could lead to some steepening of the curve. The belly end of the curve is well primed to offer some buying opportunities.

Table 1: Z-Signal on Selected Government Bonds

Bond Pairs	R2023/R204	R209/R2023	R2048/R2023
Z-Signal	1.00	0.40	0.44

Source: EAR and Bloomberg

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Real Yield Bonds/CPI-linked Bonds

Running Yield and Expected Holding Period Return (HPR)

Investors often prefer an asset class or investment that protects them against the loss of buying power or acts as an inflationary hedge. Although an investment may be included in a portfolio to primarily act as an inflationary hedge, it does not imply that investors should be content with passive or lazy returns from such an investment. This brings forth the principle that EAR believes subscribes to, which is; no investment should be a lazy one! One of EAR's views is that any investment should have a strategy designed to maximize returns and it is rare for EAR to advocate for a biased buy-and-hold strategy with no consideration of some other measures. For instance, some measures that do not account for time value of money may not so much appeal to one component of fixed income whilst they may appeal to another component of the asset class. CPI-linked bonds commonly known as linkers may easily be termed as one of the easiest long-term investable assets that promise good returns in the context of SA (as an inflationary economy) and one can safely say it is one investment that requires patience. This is why some pension funds would seek to have a fair allocation of CPI-linked bonds in their portfolios. However, it does not suggest that an investor needs to have an investment horizon or period similar to that of a pension fund if one is aiming to include such assets in their portfolio. As shown in the table below, an investor may first assess his/her short-term returns through some peculiar measure such as the running yield from CPI-linked bonds over some short-term holding period of such bonds. The running yield disregards any capital gain or loss that might arise from holding and trading a bond and does not consider the time value of money. In this regard, EAR applies the running yield to estimate the cost of or some resultant profit from the short-term holding of the following linkers; ACSA's AIRL01, Eskom's EL30, Sanral's HWAY30 and FirstRand's FRBI23. For purposes of this report; if short-term rates (1 month or 3 months Jibar) are higher than the current yield, holding the bond would come at a "running cost". This is sometimes referred to as "negative carry" or "negative funding". Such an analysis would be useful to various practitioners, including traders. The table below shows a number of selected corporate bonds (mainly SOC bonds and one FirstRand bond, the FRBI23). From the table below, it is evident that an investor would have earned a running yield of 4.97% from holding FirstRand's FRBI23 bond over 6 moths (from 3 January 2017 to June 2017) and more compelling to the case is that the running yield was higher than FirstRand's dividend yield of 4.57%; implying a yield advantage of 0.4%. Over the same period, the 3 month Jibar averaged 7.34%, which suggests that a trader who would have opted for the FRBI23 would have a suffered some negative carry of 2.37%. Of the selected corporate bonds; SANRAL's HWAY24 bond provided investors the second best returns from a running yield/short-term holding perspective out of the selected bonds. This takes into account inflation indexation and this is because the HWAY24 boasts one of the highest index ratios in comparison to other CPI-linked corporate bonds. However, this was still well below the 3 month Jibar average over the same period.

Table 2: Running Yield on Selected Corporate CPI-Linked Bonds

	AIRL01	EL30	HWAY24	FRBI23
Coupon rate (%)	3.64	2.30	5.50	5.50
Price (excluding indexation)	103.84	94.35	119.23	110.71
Price (including indexation)	171.89	113.56	287.51	266.96
Yield (%)	3.12	2.77	2.49	3.38
Running yield (without indexation)	3.51%	2.44%	4.61%	4.97%
Running yield (with indexation)	2.12%	2.03%	1.91%	2.06%
Maturity Date	30 April 2028	29 July 2030	07 December 2024	07 December 2023

Source: EAR and Bloomberg

Only one companion government bond, the I2029 to Eskom's EL30 bond, provided better return results in terms of its running yield, generating a running yield of 2.78% relative to Eskom's (EL30) running yield of 2.44%. Interestingly enough is that the R197, which is FirstRand's FRBI23's companion bond, provided a better short-term holding return relative to FirstRand's dividend yield, which suggests that the FRBI23 and the R197 were better investment alternatives over a 6 months period since January 2017 in comparison with the FirstRand equity instrument, especially for managers managing balances/multi-asset portfolios.

Table 3: Running Yield on Selected Government CPI-Linked Bonds

	R210	I2029	I2025	R197
Coupon rate (%)	1.88	2.60	1.88	5.50
Price (excluding indexation)	100.89	93.36	96.32	117.39
Price (including indexation)	182.62	98.38	126.91	291.61
Yield (%)	2.51	2.53	2.54	2.55
Running yield (without indexation)	1.86%	2.78%	1.95%	4.69%
Running yield (with indexation)	1.03%	2.64%	1.48%	1.89%
Maturity Date	31 March 2028	31 March 2029	31 January 2025	07 December 2023

Source: EAR and Bloomberg

Expected Performance – Holding Period Return (HPR)

As uncertainties around markets prevail, particularly in SA, one cannot afford not to invest. However, an investor may be tempted to take a cautious approach by targeting short-term investments whilst generating a yield in the process. Further, some thorough assessment could aid the process. What happens when short-term holding comes with some negative carry? Should investors dump linkers? Lo and behold! Linkers require some bit of patience as capital gains could compensate for what may seem to be a lower running yield. Furthermore, until recently, a great number of SA linkers would trade at elevated premium levels; thus, compelling investors to hold the instruments for longer so as to recover the premium paid when purchasing the instrument. Investors who may purchase the FRBI23 to hold for a period of one year, assuming the FRBI23 is bought at current levels, may expect to generate a holding period return (HPR) of 14.6%. It should be noted that such a return may be realised only if the instrument is sold after 12 months of buying it. This means that an investor who buys the FRBI23 at current levels by deploying R100, 000.00 may sell the bond for R114, 583.01 in 12 months' time, generating a price return or HPR of 14.6%. The EL30 is expected to have the second highest HPR at 11.4%. This suggests that for every R100, 000 deployed in buying the EL30, an investor may expect generate an HPR of R11, 387.73 in Rand terms (or sold for R111, 387.73) after 12 months given some probability of expected CPI indices printing in the future.

Table 4: Running Yield on Selected Government CPI-Linked Bonds

	AIRL01	EL30	HWAY24	FRBI23
Coupon rate (%)	3.64	2.30	5.50	5.50
Expected price (excluding indexation)	104.71	95.73	116.11	115.55
Expected price (including indexation)	190.29	126.49	307.39	305.89
Yield (%)	3.08	2.72	2.75	2.42
Maturity Date	30 April 2028	29 July 2030	07 December 2024	07 December 2023
Holding Period Return (HPR)	10.7%	11.4%	6.9%	14.6%

Source: EAR and Bloomberg

Over a 1 year holding period, the HWAY24 is expected to generate the lowest HPR for investors out of the selected corporate bonds with an HPR of 6.9% expected to be realised from the short-term holding of the instrument. However, the bond still offers a slightly higher coupon rate of 5.5%.

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Foreign Exchange (Forex) (and Commodities

Principal Component Analysis

The foreign exchange (FX) market is one of the most liquid and popular a financial market as it dwarfs all others in size. It is in the FX market that certain analytical tools can be considered. In FX markets; news flow, scheduled data releases and other events usually drive traders to pace themselves. In this research note, EAR examines important drivers of some 7 exchange rate pairs, largely developed market (DM) currencies.

Correlations in exchange rate movements can be used for two reasons: risk management and trading signal detection. For instance; the likelihood of large losses can be significantly higher when the currencies held in some multi-currency portfolio are positively correlated. With regards to trading signal detection; correlations between currencies sharply increase when the key currency (e.g. the US Dollar/USD) dominates the market. The overarching purpose of the analysis is to construct some predictive tool, so as to identify when some pairs move together and when they diverge. EAR excavates this through a method that does not impose a lot of structure and “supposed relationships” on the data and would rather extract volatility factors directly so. The method ejects implicit sources of FX volatility. The currencies are grouped into selected developed markets (DM) pairs.

In the developed market, two drivers explained some 93% of the co-volatility among seven currency pairs. The drivers are identified as global risk trade (on which the RORO theme is predicated) and carry/commodity driver. The portion of co-volatility accounted for by the first and significant driver scores high, which implies that these DM currency pairs are “unusually” correlated at the moment. Interestingly, the second driver; carry, which relates to country-specific risks ranks lower than global risk trade as virtually all DMs contend with low and in some cases negative interest rates.

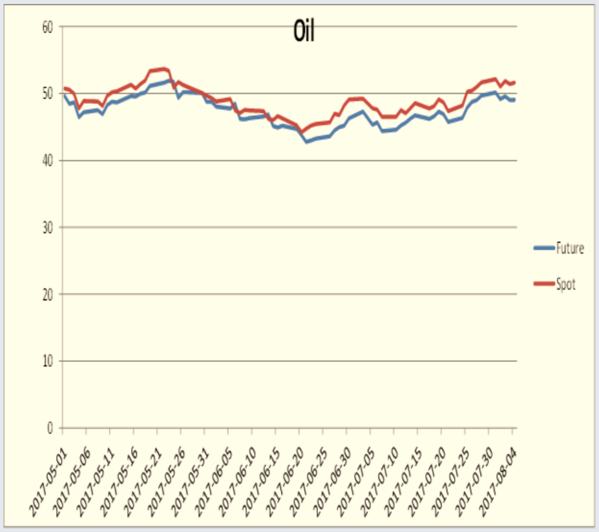
The seven pairs feature the three most liquid commodity currencies; USDCAD, AUDUSD and NZDUSD. The *Loonie* (Canadian dollar/CAD) typically responds to oil price movements. The *Kiwi* (NZD) and the *Aussie* (AUD) would somewhat trend in concert with demand for commodities such as gold and iron ore. Therefore, some structural kink/curl is further stressed by the positive “carry/commodity” coefficient (0.01) pertaining to the USDCAD whilst the two other commodity pairs’ commodity driver proved to move inversely with carry sentiments. Strikingly, the crude oil market slipped into backwardation. The Canadian Dollar has thus made advances against the US dollar and this move was in tandem with the slight rise in the spot price of oil. Hence, the positive coefficients that relate to both risk trade and commodity driver on this particular pair. On the other hand, recently renewed bouts of risk on trade affected the price of gold (downwardly so). Therefore, the NZDUSD would present a potential short (NZD sells) whilst there could be potential benefits from a CAD buys. A broad based USD trade could benefit; carry loadings for both the cable (GBPUSD) and EURUSD scored negative. Therefore a broad USD short against any of the two (EURO or GBP) could pay off.

Table 5: Developed Market FX Pairs

FX Pairs	Global Risk Trade	Carry/Commodity Driver
SEKUSD	2.34	-0.11
USDCAD	2.34	0.01
EURUSD	2.29	-0.16
GBPUSD	2.26	-0.05
CHFUSD	1.27	0.75
AUDUSD	2.30	-0.08
NZDUSD	2.19	-0.03

Source: EAR and Bloomberg

Figure 1: Brent Crude Spot and Brent Future



Source: EAR and Bloomberg

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Equities – Real Estate Investment Trusts (REITs)

Minimum Acceptable Return (MiAR) and Maximum Acceptable Return (MaAR)

The Minimum Acceptable Return (MiAR) is a concept or principle applied consistently by investors, mostly in the alternative asset/investment space so as to establish whether a particular investment decision may generate some bare minimum returns that a particular investor would deem acceptable. Maximum Acceptable Returns (MaAR) is a concept rarely applied but may be used by investors in determining the acceptable returns when a stock performs well.

For this edition of EAR's multi-asset note, three specialist small cap REITs listed on the JSE; Fairvest, Equities Property Fund and Indluplace were considered from a quantitative investment perspective. In terms of MaAR and MiAR, investors have been provided with some indication as to the returns they may accept on the three stocks, given the respective volatility of the returns of the three stocks and this could assist traders or short-term investors in determining exit points, given the proposed acceptable returns. With regards to the return criteria of these stocks, Equities Property Fund (EQU) has been the best performer out of the three selected specialist REITs; generating the highest returns over a 1 year and 6 month period; 34% over a year and 8.2% over six months. The behaviour of the daily returns on EQU suggest that over the observed periods, the daily returns were mostly concentrated on the lower side, meaning that the daily returns were dominated by lower or negative returns in spite of the stock showing the largest gain out of the three specialist REITs. Fairvest (FVT) generated moderate returns for its investors over the past year (17.3%) and 6 months (6.7%). Indluplace (ILU) performed the weakest out the three specialist REITs with its one year loss of 10.4%, which was characterized by daily returns moderately concentrated on the lower side of the daily returns' series and scale. Furthermore, the 6 months loss of 5.2% was characterized by daily returns that were marginally concentrated above the average daily return. What all these stocks shared in common was the degree of excess volatility that characterized their respective daily returns, which suggests that the behaviour of daily returns was too jumpy. Strikingly, excess volatility does not imply poor performance; this is laid bare by the impressive run that EQU had; albeit it brought in its train wide price and thus return swings. Is there any reason to shun or befriend excess volatility or volatility of volatility? The trick lies in knowing how to play it!

What Should Investors Target or Expect?

The concept that is often applied in investment management is the minimum returns investors may accept, which is often referred to as the hurdle rate. However, some careful consideration may be required when assessing the maximum acceptable return or what may title an exit return given the behaviour of the stock over a specified period. In this note, EAR expanded the scope of Minimum Acceptable Rate of Return to an approach that disregards some cost of capital. This approach would rest on careful mining of potential future returns' path with some identical probability of occurrence attached to each possible daily return. Thus, EAR established a view on the possible returns that may be generated from the three small cap specialist REITs and what investors should expect as possible minimum and maximum gains (or returns) from the stocks over the short-term. Furthermore, the modelling approach seeks to shun recency bias! The table below shows that Indluplace's MaAR is expected to be the highest out of three and taking into account the weak performance of the stock over the past year, investors in ILU should target a MaAR of 38.6%. However, there is almost a 60% probability that such a return may be generated from holding ILU over the short-term. EAR is of the view that the minimum returns investors may target on ILU should not be lower than 5.9%. Given the targeted minimum and maximum returns on ILU, there is 38.2% probability that ILU may exceed the targeted return of 38.6% and there is a 49.9% that investors may generate returns lower than the minimum target of 5.9%. FVT is expected to generate the second best target returns out of the selected three specialist REITs over the short-term with a targeted return of 29.9% accompanied by a 70% probability. However, there is a 28% chance that the maximum targeted return on FVT may be exceeded over the short-term, whilst there is a 60.2% chance that investors in FVT may experience returns lower than the minimum return of -1.8%.

Table 6: MaAR and MiAR on Selected REITs

	FVT	ILU	EQU
Maximum Acceptable Return (MaAR)	29.9%	38.6%	27.5%
Minimum Acceptable Return (MiAR)	-1.8%	5.9%	4.9%
Probability of return exceeding MaAR	28.8%	38.2%	41.0%
Probability of return being lower than MiAR	60.2%	49.9%	51.7%

Source: EAR and Bloomberg

EAR's analysis suggests that ILU should be expected to compensate investors for its historical underperformance in the short-term and therefore investors may need to hold the stock to achieve the maximum targeted return. From a return perspective, ILU ranks top in light of the stock having the highest expected MaAR and the most palatable MiAR, especially in the context of the lowest probability (in relative terms) of performing below the minimum targeted return. Investors may also need to be mindful that the returns are expected to be concentrated above the average daily return on FVT as well as ILU, suggesting that exit opportunities in as far as hitting higher returns (lower or above the targeted MaAR) may abound.

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