EQUITY & ALTERNATIVES RESEARCH©

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Anglo American PLC (AGL)

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Over the past few months, some may have observed that one of EAR's consistently applied techniques is the Hurst exponent (H), particularly on listed equities. A brief reminder; the H tests whether a particular set of asset prices or returns tend to mean revert, are random or reflect some trend (upward or downward). Essentially, H helps in understanding the historical asset behaviour and makes it much easier for one to infer the future path of prices or returns. However, at different times; asset prices may exhibit all three characteristics (mean reversion trend and some random or memory-less behaviour). This is where a deeper understanding of the asset price or return behaviour becomes all the more critical. ***The historical behaviour of the asset should not be "oversold" as though the same pattern will occur in the future; hence reliable modelling of the prices or returns becomes essential in the process***. More so, the historical price pattern needs to be consistent for one to be able to make a base inference around the price.

Trading strategies can prove quite profitable mostly if asset prices are either mean reverting or trending. Such trading strategies that EAR present in the notes are free of trading and other costs as those may vary due to a number of factors. In screening the JSE Top 40 Index for opportunities and with a focus on shares that reflect a consistent mean reversion (objective); EAR's cursor pointed to Anglo American Plc (AGL). Since February 2017, AGL proved to be consistent in its mean reversion level on a rolling basis from a price perspective. The intra-day price series over bi-monthly periods (2 week period), suggest AGL has been characterised by some strong degree of mean reversion as reflected by an H ranging from 0.28 to 0.33.

EAR's observation is that AGL's mean reversion presents opportunities to short and long the stock. Further to EAR's observation, the stock tends to "park" on one side of the mean for extended periods before reverting to a particular mean (or surpass the mean either up or down). Despite the strong and consistent mean reversion observation, the frequency may be indicative that traders/investors need to hold on for longer periods on their trades. What EAR observed is that AGL's share price is often characterised by some positive skewness[1] over rolling 2 week periods, suggesting that those investors that tend to long the stock at lower levels have been forced to hold on to their positions for longer periods over 2 weeks due prices being concentrated too much on lower side. However, this does not suggest that the price hardly increases. In EAR's view; the behaviour and direction of the skewness serve a valuable trigger for trading this share (bearing in mind that it is a commodity stock after all). Thus, should the intra-day series indicate some degree of positive/negative skewness on the first trading day of a position that may be kept for two weeks; this would present an opportunity to take advantage of potential upward and downward swings (assuming a position would be initiated on a Monday. Therefore, it is essential for investors to assess whether prices are positively skewed on the first day of initiating the trade. This is because the skewness may provide investors with an indication of the window time to enter or exit trades, although the magnitude may differ from time to time.

[1]For trading context; negative skewness implies that prices were in most cases, trading above the average. Positive skew; prices were in most cases, trading below the mean.

Trading AGL

Due to the consistent mean reversion in AGL, the mean reversion trading strategy applies, which favours both short and long positions. However, the skewness in the price becomes a fundamental trigger. With regards AGL, there is no clear indication of some price momentum. Therefore, either short or long can benefit. Be that as it may; investors may need to watch the moments (please excuse the pun); particularly the skewness! Prices that are negatively skewed would suggest that investors that take short positions on the stock only have a limited time to exit/realise profits once the price drops below the average or reaches the average (also taking into account that the share price tends to mean reverts 4 to 8 times over a 2 week period).

Trigger/Indicator	Result
Trading Strategy	*Mean Reversion (HI of less than 0.5)*
Expected Price (mean)	*R 184.73*
Upper price potential (95% probability)	*R 193.47*
Low er price potential (95% probability)	*R 176.55*
Additional trigger	*Direction of the skewness for the first trading day*

Source: EAR and Bloomberg

The table above suggests that AGL's share price is expected to average around/not far from R184.73 over the next two weeks (in hourly intervals). The expected price behaviour of the stock (conditional on a strong degree of H) may favour short positions, especially investors who may buy at levels above R184.73 as the share is expected to mostly trade below R184.73, presenting sufficient opportunities to realise profits. Investors that may take short positions on AGL aiming for high profits are warned that the intra - day price is not expected to drop below R176.55, 95% of the time over the next two trading weeks. Investors that take long positions may need to be aware that the price is not expected to trade above levels of R193.47 over the next two trading weeks, given a 95% probability. All the same, there is a 5% chance that the price could trade above the level of R193.47.

For "hard-core" mean reversion traders/investors, a hybrid approach may be applied in that a short position on AGL may be initiated and once profits are realised after the first mean "breach", a long position on AGL could be initiated to take advantage of the potential gain. However, EAR has observed that in as much as the H is consistent, the frequency of prices "touching" the mean tends to range between 4 and 8 times and therefore investors need to be very cautious once the third trigger is observed.

Letlhogonolo Russel Modungwa, CA (SA)

For queries please email: admin@earesearch.co.za or russel@earesearch.co.za

Back-testing Richemont (CFR)

A traditional, qualitative investment management process differs from a quantitative process in that the latter can be subjected to some back tests. Back-testing is merely conducting a realistic historical simulation of a particular strategy's performance. Alternatively, back-testing is akin to performing a binomial experiment; wherein the number of successes or "hits" is culled from the total number of trials over a specific period that the strategy was said to be applied. The use of performance measures such drawdowns and the "plain-vanilla Sharpe ratio" has increasingly gained popularity with regards back-testing of quantitative trading strategies. The common critique is that most "ready-made" trading strategies do not withstand careful back-testing. All the same, In EAR's view; the difficulty is not the lack of trading ideas out there, but choosing one that is viable, implementable and not stuck in some time-warp. Therefore, for it to tick the boxes, it has to be back-tested!

The first Equity trading note that EAR published for the trading week (24 – 28 April 2017; the focus was on Richemont (CFR). EAR presented a strategy that takes advantage of trending share prices. We defined it as EAR's filter rules for a trending stock, particularly CFR. Thus, we presented some filters for short positions under different trading conditions and filters for long positions under various trading conditions. Lo and behold! The kind of technique that EAR presented was prone to some “regime shift” in the share price performance as the prospective direction of the trend was not clear. Even so, EAR made a call that once the return on the share hits -0.02% (during intra - day sessions), investors/traders should consider taking a long position on the share. Suffice it to say that 68 per cent of the time during that trading week, intra-day returns were above -0.02%. Over the period, EAR made a call that short positions should be initiated once returns hit a trigger point of 0.8% (under mellow trading conditions) and this did not suffice! Trading conditions that characterised CFR changed from mellow to “jumpy” and thus an upward trend. Therefore, a long position would have benefitted those who applied the trigger point of -0.02% as suggested in the report. Watch out for the Hurst Exponent as well!

Sivu Ngwane

For queries please email: admin@earesearch.co.za or sivu@earesearch.co.za

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