Pairs Trade on Retail REITs:
A Case Study on MallStreams

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MallStreams

Figure 1. Aggregate Customer Visitation

- MallStreams provides daily customer visitation to 4,000+ individual shopping centers and enclosed malls owned or operated by the top 30 publicly traded retail REITs by market cap.

- Figure 1 uses MallStreams to plot aggregate customer visitation to all properties owned by 4 selected REITs. The visitation is normalized and indexed to support easy comparisons across any time horizon or set of properties. Note visitation is aggregated over a 28-day rolling window. This sequential aggregation highlights business seasonality: peaks on Black Friday and during the Christmas holiday period are well-defined.

- The rank orders the REITs by those with the highest average customer visitation per property to those with the least. For example, GGP properties receive approx. twice the number of visitors as SKT properties.

Figure 2. YoY Change in Visitation

- Figure 2 plots the year-over-year ("YoY") change in the customer visitation index from Figure 1.

- Note multiples of 7 are chosen for rolling windows to ensure aggregation periods are comparable in consecutive years.

Next, this information is used to construct the trading signal for the strategy.
Signal Construction

Figure 3. Rank by Rate of YoY Change in Visitation

- **Figure 3** plots the rate of change in the YoY curves from Figure 2 for October 2017. This rate of change is computed over a 7 day rolling window.

- Long and short positions are derived from the rank of these rates of change at a given point in time. For example, in the beginning of October, assuming AKR, GGP, SKT, and WRE were the only REITs being ranked, the strategy would be long GGP and SKT and short AKR and WRE.

Figure 4. Average Holding Periods

- **Figure 4** shows the average holding periods in days after the logic from Figure 3 is applied to U.S.-listed REITs in MallStreams.

- The strategy takes long positions in the 10 highest ranked REITs and short positions in the 10 lowest ranked REITs.

Next, the positions are backtested while varying a key parameter.
Performance Statistics

Figure 5. Cumulative Return

- **Figure 5** shows the cumulative return across a range of values for the key parameter in the model: lag days. Lag days are defined as the number of days required for the market to assimilate the fundamental information represented in MallStreams.

- For example, a lag of 10 means the strategy is using the rank from 10 days ago to determine the positions for today.

- The strategy uses daily close-over-close returns for each of the tickers listed in Figure 4. Cumulative returns are compounded from daily returns. Note that transaction costs are ignored in this analysis.

- Ignoring the inherent leverage in any short position, the strategy is unlevered. For example, with a total of $100 to allocate, $50 is allocated to long and $50 to short.

Figure 6. Stable Sharpe Ratio

- **Figure 6** demonstrates that the Sharpe Ratio for the strategy is relatively stable over a broad range of lags.

- This stability suggests the fundamental information represented in MallStreams is not readily available through other data sources.