SIM Fund Team B

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Investment Thesis

- Value – Profitability – Momentum
Portfolio Strategy

Target Universe

Value

Momentum

Cash Based Operating Profitability
Cash-Based Operating Profitability

- CBOP is a stronger predictor of future returns than profitability alone.
- Hedge against unprofitable value stocks.
- CBOP is expected to result in higher Sharpe ratios.

\[ y = \beta_{MKT} \text{MKT} + \beta_{RMW} \text{RMW}_{cbOP} + \beta_{HML} \text{HML} + \beta_{UMD} \text{UMD} + \epsilon \]

Source: Ball et al., Journal of Financial Economics
\[ y = \beta_{MKT} \text{MKT} + \beta_{HML} \text{HML} + \beta_{RMW} \text{RMW}_{cbOP} + \beta_{UMD} \text{UMD} + \epsilon \]
Momentum

\[ y = \beta_{MKT} MKT + \beta_{RMW} RMW_{cbOP} + \beta_{HML} HML + \beta_{UMD} UMD + \epsilon \]
Portfolio Development/Implementation Process

Phase 1: Source data from Bloomberg: Accounting and Stock Returns

Phase 2: Input stock data into Portfolio Model

Phase 3: Calculate Cash Based Operating Profitability Ratio

- Calculate YTD Returns & Price/Book Ratio
- Apply Factor Weights & Rank Stocks

Sort by Sector, Weight Stocks, & Invest in top 65 Stocks according to Rank

Rebalance Monthly
Selecting the Investable Universe

Building & Rebalancing the portfolio requires an initial screening in Bloomberg to reduce the universe of securities to a manageable level, removing any that fall outside of ASU Charter Requirements.

- Target Investable Universe: ~ 3,000 Stocks
- Trading Volume 1 Day Ago >50,000 Shares
- Market Cap >= $500 Million
- Country of Domicile: United States
- Common Equities Only
- Total Universe of Securities

Target Universe
Charter Requirements
Required Stock Data: Bloomberg

Value
- Ticker
- Price/Book Ratio
- Common Equity
- $ Free Cash Flow: Current Quarter
- Market Capitalization

Cash-Based Operating Profitability
- Sector
- Free Cash Flow to Equity Ratio
- Return on Equity: ROE
- Operating Profit: Current Quarter
- Δ Accounts Payable: Quarterly
- Δ Accounts & Notes Receivable: Quarterly
- Δ Accrued Expenses: Quarterly
- Δ Inventories: Quarterly

Profitability
- Total Return %: 1-Year
- Total Return %: YTD
- Sharpe Ratio: YTD
Cash Based Operating Profitability Ratio

The resulting numerical figure will be added to the Value and Momentum factors, producing the final ranking used to select the highest 65 stocks for the portfolio.

Cash-based operating profitability
= Operating profitability
  + Decrease in accounts receivable (RECCH)
  + Decrease in inventory (INVCH)
  + Increase in accounts payable and accrued liabilities (APALCH).

Operating Income (Losses): Current Quarter
Accounts & Notes Receivable: Q & Q-1
Inventories: Q & Q-1
Accounts Payable: Q & Q-1
Accrued Liabilities & Expenses: Q & Q-1
Total Equity
YTD Returns (Momentum)

Momentum Factor

- Applied as a function of YTD Returns and Factor weighting.
- Stocks with superior returns are given preferential ranking in portfolio model.
- Stocks with positive returns in one period tend to continue to perform well in follow-on periods.

Jegadeesh and Titman (1993)
Price to Book Ratio (Value)

Value Factor

• Applied as a function of Price to Book Ratio and Factor weighting.
• Value only strategies have underperformed relative to other strategies over the prior decade.
• A combination of Value & Profitability is expected to outperform value only portfolios.
Sector Weights

Assign weights based on stock rank → Compare current weights to charter requirements → Final sector weights

Add back to stocks in sectors below limits

Reduce evenly all stocks within sector to adhere to charter requirements
Scores and Ranking

All stocks are scored & sorted by Sector.

Top 65 ranked are selected.

Scoring and Ranking

Momentum
Value
Cash-Based Profitability
<table>
<thead>
<tr>
<th>Stock Range</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1-10</td>
<td>~3%</td>
</tr>
<tr>
<td>#11-37</td>
<td>~1.5%</td>
</tr>
<tr>
<td>#38-65</td>
<td>~1%</td>
</tr>
</tbody>
</table>
Sector Weights

PORTFOLIO SECTOR CONCENTRATION

- Information Technology: 19%
- Consumer Discretionary: 16%
- Communication Services: 10%
- Health Care: 14%
- Consumer Staples: 8%
- Financials: 12%
- Utilities: 0%
- Industrials: 12%
- Energy: 3%
- Real Estate: 3%
- Materials: 3%

RUSSELL 3000 SECTOR CONCENTRATION

- Information Technology: 26%
- Consumer Discretionary: 14%
- Communication Services: 10%
- Health Care: 14%
- Consumer Staples: 6%
- Financials: 11%
- Utilities: 3%
- Industrials: 12%
- Energy: 3%
- Real Estate: 3%
- Materials: 2%
Since the initial seeding on 11/23/2020, the portfolio has generated a 2.25% return compared to the Russell 3000 ETF’s 1.92% return.
APPENDIX
Example

- Stock - Netgear Inc. (NTGR)
- CBOP Ratio = 0.03
- P/B Ratio = 1.45
- YTD Return = 26.40%

\[
\text{Score} = \frac{P}{B} (\text{Profitability Weight}) + \frac{V}{P} (\text{Value Weight}) + \text{YTD Return} (\text{Momentum Weight})
\]

\[-0.37 = 0.03(0.5) + 1.45(-0.3) + 0.264(0.2)\]

The highest 65 stocks according to score are ranked and selected after controlling for sector exposure.
Exclude if any of the following are true for a particular stock:

- Cash Based Operating Profitability Ratio or Free Cash Flow to Equity Ratio cannot be calculated.
- Return on Equity < 0%
- Exchange Traded Funds (ETFs)
- Free Cash Flow to Equity Ratio < 0
- Price to Book Ratio = 0
- YTD Return < -20% or = 0%