



BEST IDEAS EQUITY

FACTOR-BASED MODEL PORTFOLIO STRATEGY



2019/04

WHAT



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Summary

Key Points in a Nutshell

1

We are proud to introduce the Factor-Based Best Ideas Equity Model Portfolio Strategy with institutional level of liquidity and low portfolio turnover.

2

The portfolio gained an annualized return of 18.7% since 2000. It has proven to outperform on a relative basis against a custom blended benchmark.

3

The portfolio returns are achieved by strategically selecting 30 quality at a reasonable price (QARP) companies generating wealth for its shareholders.



Objectives

Setting a Way to Achieve Success

The portfolio is designed for potential investors with medium risk tolerance seeking exposure to high quality companies (10 Canadian, 10 US and 10 International stocks) by following a rigorous bottom-up factor based quantitative approach. The investment objectives of the portfolio are to:

- 1 Target long term capital appreciation among the best opportunities available.
- 2 Consistently deliver performance over a custom blended benchmark.
- 3 Maximize tax efficiency by having a low portfolio turnover ratio.

Characteristics

Comparison of Smart Beta Strategies



QARP stands for Quality At Reasonable Price. We are finding companies of quality trading at attractive multiples that consistently generate wealth for its shareholders.

	Market Cap Weighted Index	Factor-Based Best Ideas Equity
Risk management goals	None	None
Systematic rebalancing	Quarterly	Quarterly
Human input required	No	Supervised
Use of Leverage	None	None
Systematic Risk	Medium	Medium
Portfolio turnover	Low	Low
Investment process	None	Bottom-Up
Investment style	None	QARP
Market behavior	Trend Following	Relative return

Methodology

Quantitative Modeling



HOW IT WORKS

A quantitative model systematically identifies mispriced stocks and attempts to deliver absolute and relative performance. Briefly, a ranking system sorts stocks from a universe based on pre-selected factors and the portfolio periodically buys the best ones and sells the ones in which conditions have deteriorated over time following various rules.

WHY IT WORKS

By rigorously adhering to this stock selection framework based on a thoroughly tested ranking system, we are able to remove the emotional element of the investment process. 80% of portfolio managers cannot beat their benchmark because 1) it is difficult to do so and 2) they unconsciously let fear and greed emotions affect their investment decisions.

A high-contrast, black and white close-up photograph of several interlocking metal gears. The gears are made of a polished, reflective material, likely steel, showing fine textures and sharp edges. The lighting creates strong highlights and deep shadows, emphasizing the mechanical nature of the scene. A solid blue rectangular box is positioned in the upper left corner, containing the word "HOW" in white, bold, sans-serif capital letters.

HOW

Philosophy

Factor-Based (FB)

1. QARP (Quality At Reasonable Price)

The end goal is to invest in quality companies trading at attractive multiples that consistently generate wealth for their shareholders.

2. Undexing

Our goal is to beat the market over the long run. We believe the best way to do it is to create a portfolio that looks very different from it.

3. Concentration

We are striving to achieve a balance between diversifying to remove specific risk yet not too much to avoid ending up mimicking the index.

4. Low Turnover

Excessive portfolio churning increases trading costs for an investor. It also means a lack of confidence, decisiveness and tax awareness.

Overview

Our Investment Process

6. Monitoring

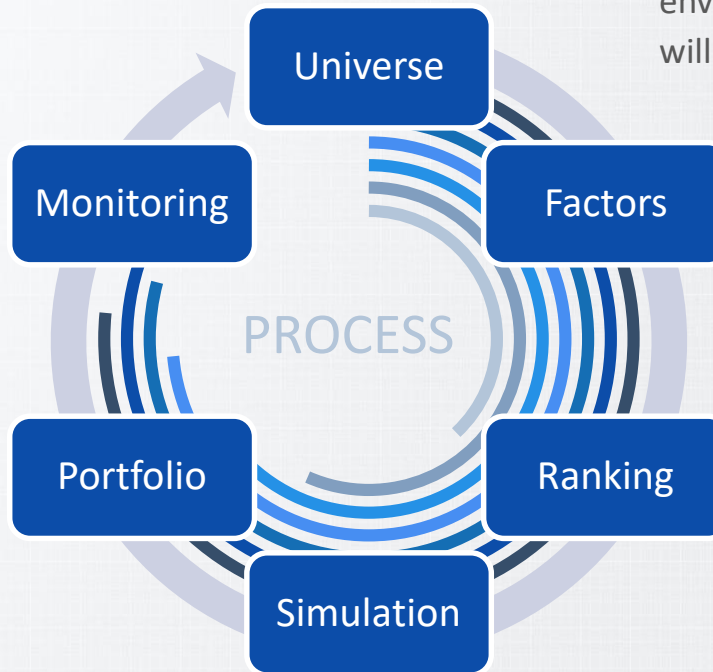
Monitor the portfolio, rebalance and carry out performance attribution.

5. Portfolio

Build the live portfolio by investing real money in the defined strategy.

4. Simulation

Form a strategy resulting from a mix of set rules and filters applied to the ranking system.



1. Universe

Define the investment environment in which we will pick our companies.

2. Factors

Design factors based on academic literature and innovative concepts.

3. Ranking

Create a composite of factors to rank companies from our defined universe.

Universe

Our Investment Environment

1+

\$billion of market cap minimum.
This is the minimum market cap requirement for a company to be considered a large cap in the US.

10+

\$million of average daily liquidity for the past month expressed as price x volume.



1000+

Stocks coming from the S&P/TSX, the S&P 500 and the MSCI ACWI Ex US universes so this strategy is benched against a custom blended benchmark made of an equal weight of each of these indices.

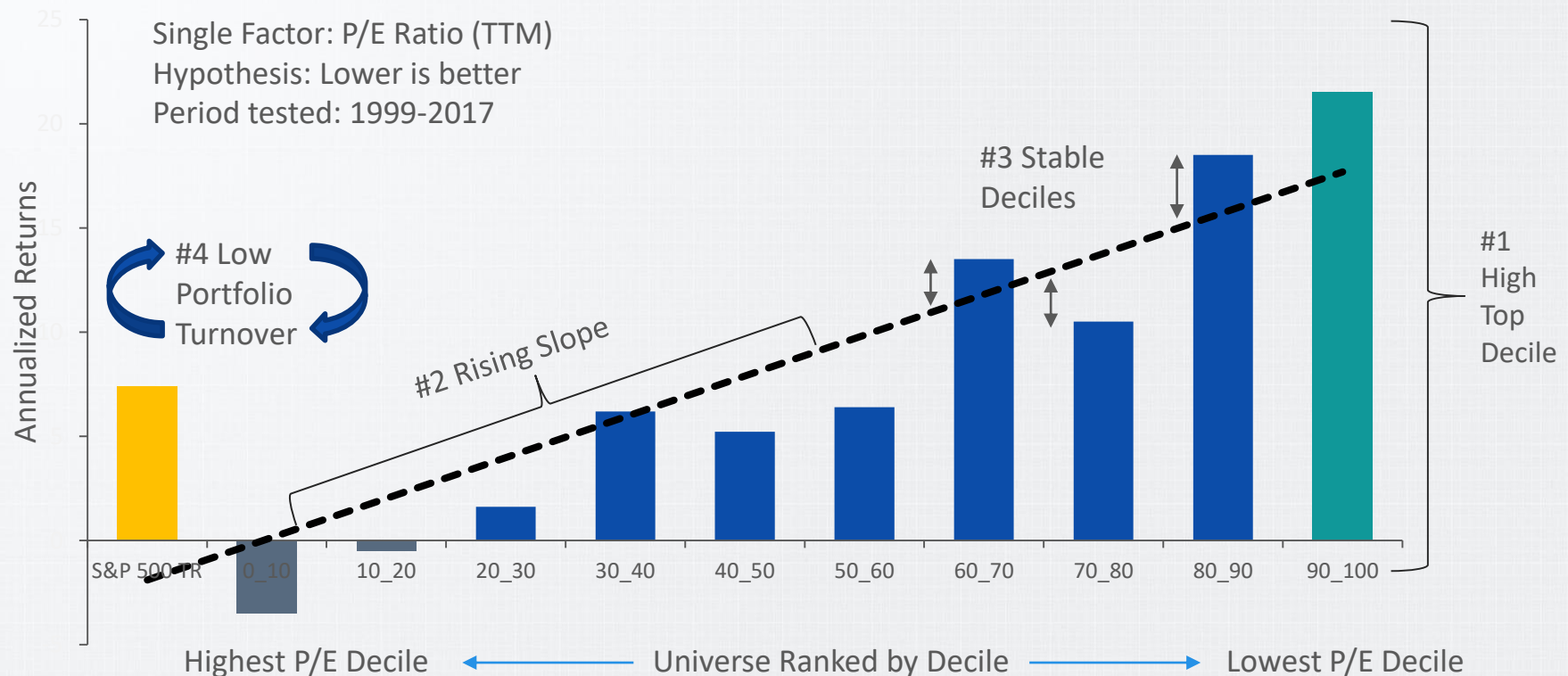
30

Stocks in our portfolio, are chosen from the best ranking decile.

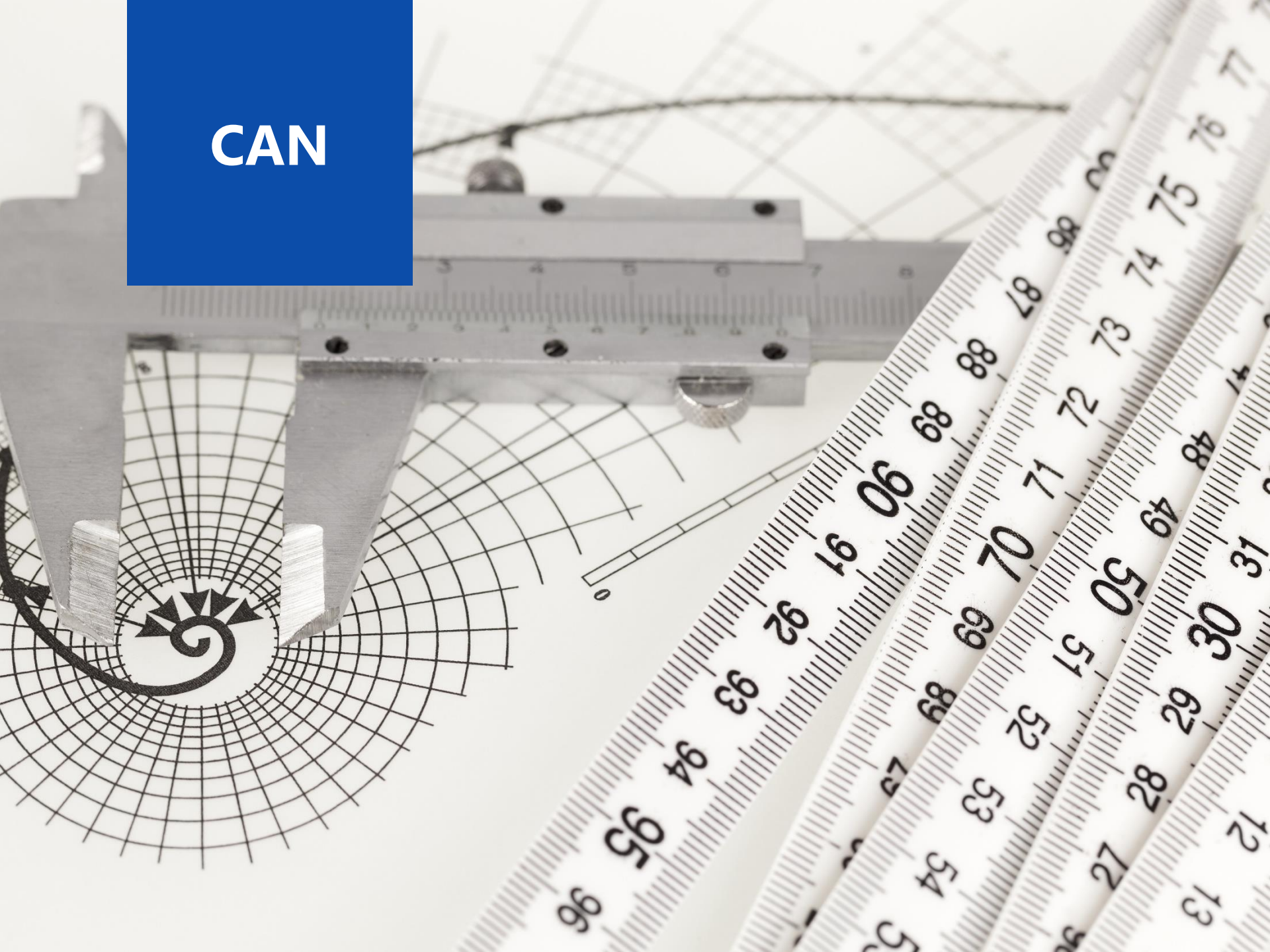
Factor

Our Selection Method

We backtested in our universe hundreds of factors individually to find the ones generating the most alpha over the last two investment cycles. We then select the best factors using four criteria shown below:



CAN



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Universe

Our Investment Environment

2.5

\$billion of market cap minimum.

This is what we consider a large cap in Canada although it is usually \$6 billion in the United States.

10

\$million of average daily liquidity for the past month expressed as price x volume.



250

Stocks passing the universe filter. They are all part of the S&P TSX Composite.

25

Stocks in our portfolio, are chosen from the best ranking decile.

Ranking

Based on Our Factor Selection

Q_{uality}

(1st part)

Earnings Quality (EPSQ) ↑

This ratio is calculated as the Operating Cash Flow minus Earnings and then divided by Total Assets.

What: Is the company manipulating accruals in its financial statements?

Why: The interpretation of this ratio is that higher is always better.

Debt Reduction (DCHG) ↓

This ratio is the difference between Long-Term Debt to Capital TTM and Long-Term Debt to Capital PTM.

What: Is the company successfully reducing its debt level from last year?

Why: The interpretation of this ratio is that lower is always better.

Free Cash Flow Margin (FCFM) ↑

This ratio measures the percent of the Free Cash Flow TTM compared to Total Revenues TTM.

What: How many dollars of free cash flow gets for each dollar of sales?

Why: The interpretation of this ratio is that higher is always better.

Dividend Yield (DIVY) ↑

This ratio is calculated as the Projected Dividend divided by the current Price, multiplied by 100.

What: How much Dividends are paid by the company relative to its Price?

Why: The interpretation of this ratio is that higher is always better.

Ranking

Based on Our Factor Selection

Quality

(2nd part)

Total Yield (TOTY) ↑

This ratio is calculated as the Buyback Yield added to the Dividend Yield, multiplied by 100.

What: How much is the company giving back to their shareholders?

Why: The interpretation of this ratio is that higher is always better.

Long Term Beta (LVOL) ↓

This ratio measures the systematic risk of a security in comparison to the whole market.

What: How volatile are the shares of a company relative to the market?

Why: The interpretation of this ratio is that lower is always better.

Price / Earnings Ratio (PERA) ↓

This ratio is calculated by dividing the current Price by the sum of the Diluted Earnings Per Share from Continuing Operations Before Extraordinary Items and Accounting Changes over the last four quarters.

What: How much investors are willing to pay per dollar of Earnings?

Why: The interpretation of this ratio is that lower is always better.

Discounted Free Cash Flow / Assets (FCFA) ↑

This ratio is calculated as the output of a Discounted Free Cash Flow model, based on the next five years and using the Mean Long Term Growth as the discount rate, divided by the Assets of the company.

What: How much Discounted Free Cash Flow per unit of Assets is the company making?

Why: The interpretation of this ratio is that higher is always better.

Ranking

Based on Our Factor Selection

V
alue
(2nd part)

Discounted Free Cash Flow / Equity (FCFE) ↑

This ratio is calculated as the output of a Discounted Free Cash Flow model, based on the next five years and using the Mean Long Term Growth as the discount rate, divided by the Equity of the company.

What: How much Discounted Free Cash Flow per unit of Equity is the company making?

Why: The interpretation of this ratio is that higher is always better.

Discounted Free Cash Flow / EV (FCFV) ↑

This ratio is calculated as the output of a Discounted Free Cash Flow model, based on the next five years and using the Mean Long Term Growth as the discount rate, divided by the EV of the company.

What: How much Discounted Free Cash Flow per unit of EV is the company making?

Why: The interpretation of this ratio is that higher is always better.

Operating Income / EV (OPIV) ↑

This ratio is calculated as the Operating Income After Depreciation divided by Enterprise Value (EV).

What: How much Operating Income per unit of EV is the company making?

Why: The interpretation of this ratio is that higher is always better.

Ranking

Based on Our Factor Selection

Momentum

Analyst Revisions 1W (REV1)



This ratio is calculated as a scaled difference between Next Fiscal Year EPS Mean of today vs last week.

What: Was there any weekly EPS revisions and how large were they?

Why: The interpretation of this ratio is that higher is always better.

Analyst Revisions 4W (REV4)



This ratio is calculated as a scaled difference between Next Fiscal Year EPS Mean of today vs 4 weeks ago.

What: Was there any monthly EPS revisions and how large were they?

Why: The interpretation of this ratio is that higher is always better.

Trend (TREN)



This ratio is calculated as 20-Day EMA divided by the 200-Day EMA and measures the price slope.

What: Is the company's price trading in a medium-term uptrend?

Why: The interpretation of this ratio is that higher is always better.

Pullback (PULL)



This ratio is calculated as the 11-Day Exponential Moving Average divided by the Current Price.

What: Has the company's price experienced a short term pullback?

Why: The interpretation of this ratio is that higher is always better.

A close-up, black and white photograph of several interlocking metal gears. The gears are made of a polished, reflective metal, likely steel, and show signs of wear and machining. The teeth of the gears are sharp and well-defined. In the upper left corner, there is a solid blue square containing the white text 'USL' in a bold, sans-serif font. The background is a light, neutral color, providing a high contrast for the metallic gears.

USL

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Universe

Our Investment Environment

6

\$billion of market cap minimum.
This is the minimum market cap requirement for a company to be consider a large cap in the US.

65

\$million of average daily liquidity for the past month expressed as price x volume.

**500**

Stocks coming from the S&P 500, the gold standard to gauge the performance of American large cap companies.

25

Stocks in our portfolio, are chosen from the best ranking decile.

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Ranking

Based on Our Factor Selection

Quality

Return on Capital (ROCA) ↑

This ratio is calculated as the Operating Income After Depreciation divided by Capital. Capital is defined as Net Property Plant and Equipment + Account Receivables + Inventory.

What: Is the company generating strong returns for its contributors?

Why: The interpretation of this ratio is that higher is always better.

Dividend / Operating Cash Flows (DOCF) ↑

This ratio is calculated as the sum of Ordinary Dividends Paid TTM and Preferred Dividends Paid TTM dividend by the operating cash flows TTM of the company.

What: How much dividend is paid by the company relative to its operating cash flows?

Why: The interpretation of this ratio is that higher is always better.

Operating Cash Flow / Total Assets (OCFA) ↑

This ratio is calculated as the difference between the TTM operating cash flow and last year's TTM operating cash flow dividend by the total assets of the company.

What: How efficient is the company at using its asset to create a return?

Why: The interpretation of this ratio is that higher is always better.

Ranking

Based on Our Factor Selection

Value

Gross Profit / EV (GPEV)



This ratio is calculated as the Gross Profit TTM divided by Enterprise Value (EV). EV is defined as market capitalization + total debt + preferred equity + minority interest – cash & equivalents.

What: How much gross profit per unit of EV is the company making?

Why: The interpretation of this ratio is that higher is always better.

Momentum

Analyst Revisions (EREV)

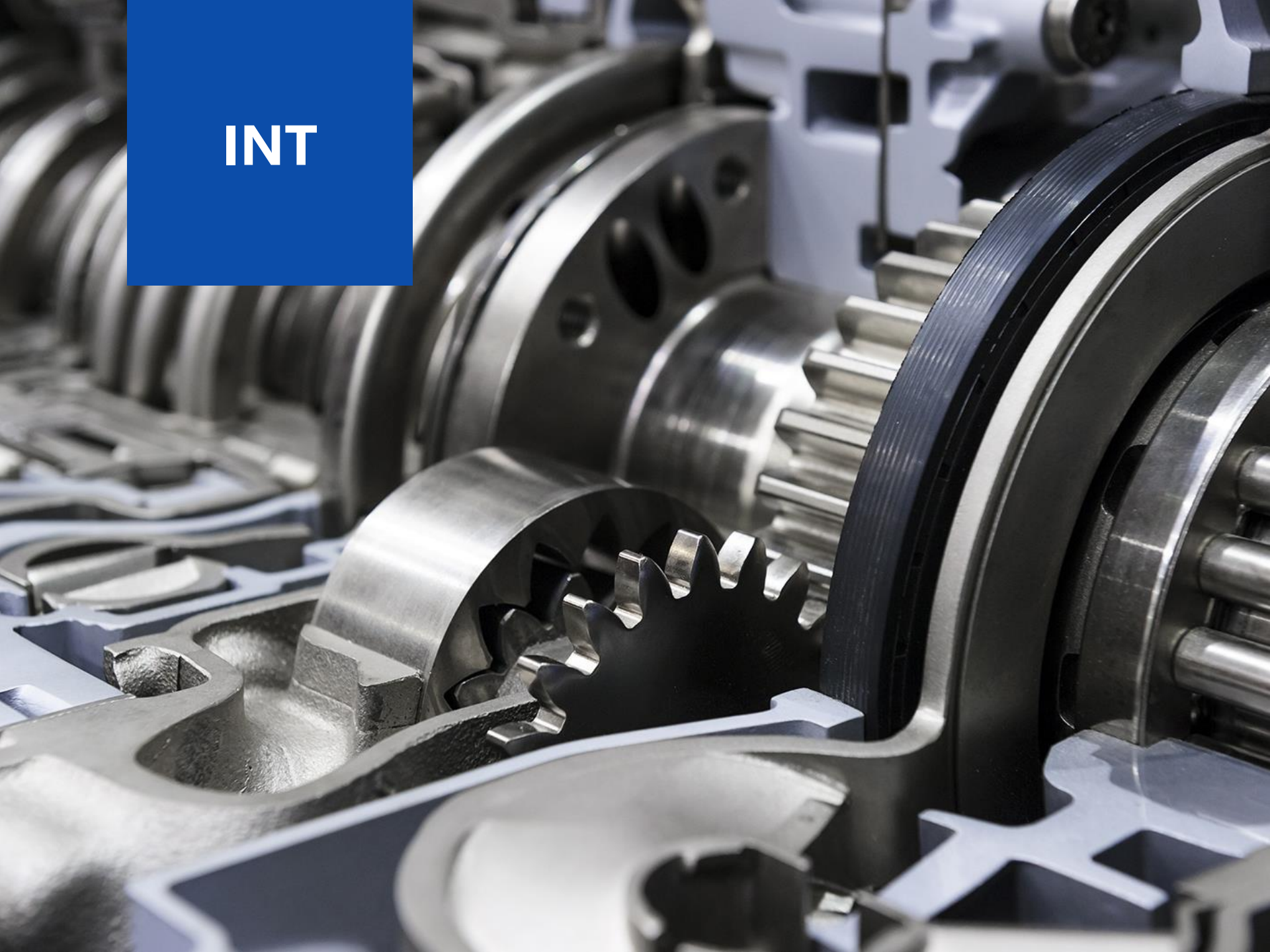


This ratio is calculated as the difference between the Next Fiscal Year EPS Mean Today and the Next Fiscal Year EPS 4 Weeks ago scaled by the current price of the company.

What: Was there any monthly EPS revision and how large was it?

Why: The interpretation of this ratio is that higher is always better.

INT



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Universe

Our Investment Environment

33

percent largest market cap of the world, including developed and emerging markets, investable universe excluding US companies.

45

\$million of average daily liquidity for the past month expressed as price x volume.



425

Stocks coming from the US ADR universe and foreign companies listed on the US stock exchange directly.

25

Stocks in our portfolio, are chosen from the best ranking decile.

Ranking

Based on Our Factor Selection

Quality

Operating Margin (OPMG) ↑

This ratio is calculated as the Operating Income divided by Total Revenue expressed as percentage.

What: Is the company generating strong operating margins?

Why: The interpretation of this ratio is that higher is always better.

Gross Profit / Total Asset (GPTA) ↑

This ratio is calculated as the Gross Profits (Revenues minus COGS) to its Total Assets.

What: How much gross profit per unit of asset is the company making?

Why: The interpretation of this ratio is that higher is always better.

Dividend Yield (DIVY) ↑

This ratio is calculated as the Projected Dividend divided by the current Price, multiplied by 100.

What: How much Dividend is paid by the company relative to its Price?

Why: The interpretation of this ratio is that higher is always better.

Ranking

Based on Our Factor Selection

Value

(1st part)

Gross Profit / EV (GPEV) ↑

This ratio is calculated as the Gross Profits (Revenues minus COGS) divided by Enterprise Value (EV). EV is defined as Market Capitalization + Total Debt + Preferred Equity + Minority Interest – Cash & Equivalents.

What: How much Gross Profits per unit of EV is the company making?

Why: The interpretation of this ratio is that higher is always better.

Operating Income / EV (OIEV) ↑

This ratio is calculated as the Operating Income After Depreciation divided by Enterprise Value (EV). EV is defined as Market Capitalization + Total Debt + Preferred Equity + Minority Interest – Cash & Equivalents.

What: How much Operating Income per unit of EV is the company making?

Why: The interpretation of this ratio is that higher is always better.

Free Cash Flow / EV (FCEV) ↑

This ratio is calculated as the Free Cash Flows divided by Enterprise Value (EV). EV is defined as Market Capitalization + Total Debt + Preferred Equity + Minority Interest – Cash & Equivalents.

What: How much Free Cash Flow per unit of EV is the company making?

Why: The interpretation of this ratio is that higher is always better.

Ranking

Based on Our Factor Selection

Value

(2nd part)

Forward Earnings / EV (FEEV) ↑

This ratio is calculated as the Next Fiscal Year Forward Earnings divided by Enterprise Value (EV). EV is defined as Market Capitalization + Total Debt + Preferred Equity + Minority Interest – Cash & Equivalents.

What: How much Forward Earnings per unit of EV is the company making?

Why: The interpretation of this ratio is that higher is always better.

Price / Earnings Growth (PEGR) ↓

This ratio is calculated as the Price / Earnings divided by the long term growth rate. It represents a simple rule of thumb: “The Price / Earnings of any company that’s fairly priced will equal its growth rate”.

What: What is the position of the Price / Earnings from its Long Term Growth?

Why: The interpretation of this ratio is that lower is always better.

Price / Earnings Relative (PERE) ↓

This ratio is calculated as the trailing twelve month Price / Earnings Ratio divided by the 5-Year Price / Earnings Low. This ratio returns a value that will at least be equal or higher than 1.

What: What is the position of the current P/E from its historical 5-Year low?

Why: The interpretation of this ratio is that lower is always better.

Ranking

Based on Our Factor Selection

Momentum

Price Momentum (PMOM) ↑

This ratio is calculated as 50-Day Volume Weighted Average divided by the 100-Day Volume Weighted Average. This measure can be seen as the medium-term slope of the price movement.

What: Is the company's price trading in a medium-term uptrend?

Why: The interpretation of this ratio is that higher is always better.

Volume Momentum (VMOM) ↑

This ratio is calculated as last week (5-Day) Average Trading Volume Minus last semester (126-Day) Average Trading Volume divided by last semester (126-Day) Average Trading Volume.

What: Has the company's trading volume activity increased recently?

Why: The interpretation of this ratio is that higher is always better.

Short Term Pullback (PULL) ↑

This ratio is calculated as the 11-Day Exponential Moving Average dividend by the Current Price.

What: Has the company's price experienced a short term pullback?

Why: The interpretation of this ratio is that higher is always better.

BES



Ranking

10 stocks are picked from each ranking system



10 Stocks may differ from the ones selected in the 25 stocks that are part of each individual strategy. This is best explained by the different rebalancing schedules of the strategies.



Factors are available in the presentation document of each individual strategy. You will find the complete definition, the rationale behind usage and the interpretation.

Simulation

Our Portfolio Rules and Filters

G

General Rules

- The portfolio is long only and without any leverage whatsoever.
- Transactions are recorded at the average high | low of trade day.
- Rebalancing frequency is quarterly and sent before market open.
- Variable slippage (average daily \$ traded) is taken into account.
- Drift weighting scheme is applied to minimize rebalancing turnover.

B

Buy Rules

- The same buy rules from the individual strategies are applied. Please read each presentation for the exact buy rules used.
- Additional rules are used to mitigate risks of each 10 stocks. Here are some of the rules used:
 - Limit max correlation between 10 stocks.
 - Total Equity must be positive at inclusion.
 - Avoiding stocks that have stale financial statements.

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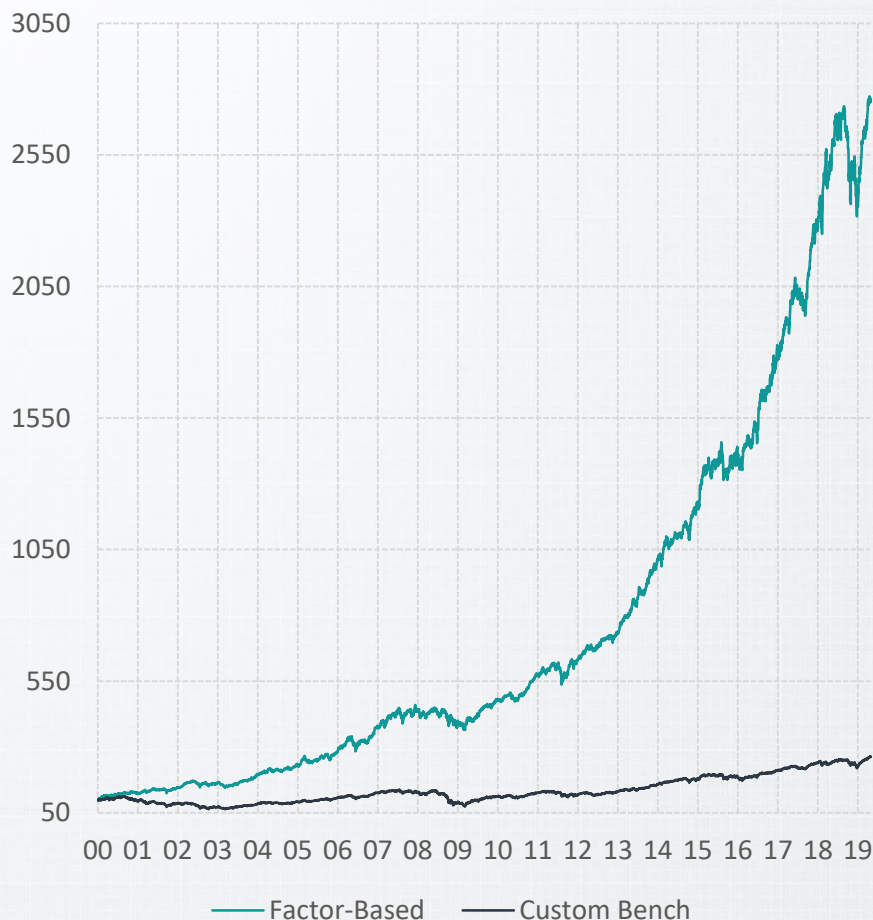
Sell Rules

- Sell stocks when its ranking falls below three deciles.
- Trim stocks weights back to 10% and below if their individual weights in the portfolio goes above 10%.
- We force positions in the universe if they are replaced inside our defined universe.

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Portfolio

Historical Performance



Key Portfolio Statistics

Annualized Return (%)
(Custom Bench TR = 5.1) 18.7

Maximum Drawdown (%)
(Custom Bench TR = -45.9) -20.6

Portfolio Turnover (%)
(Custom Bench TR = 6.0) 62.6

Index Correlation
(Custom Bench TR = 1.00) 0.65

Sharpe Ratio
(Custom Bench TR = 0.35) 1.51

Since Inception (January 1st, 2000)

WHY



Statistics

Calendar Performance

Yearly

Calendar Returns	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Factor-Based	27.7	14.9	12.0	19.3	19.1	19.8	35.9	16.9	-11.6	21.9
Custom Bench	-3.5	-11.1	-17.1	17.2	10.5	14.8	20.1	2.4	-31.0	25.5
Difference	31.2	26.0	29.1	2.1	8.6	5.1	15.8	14.5	19.4	-3.6

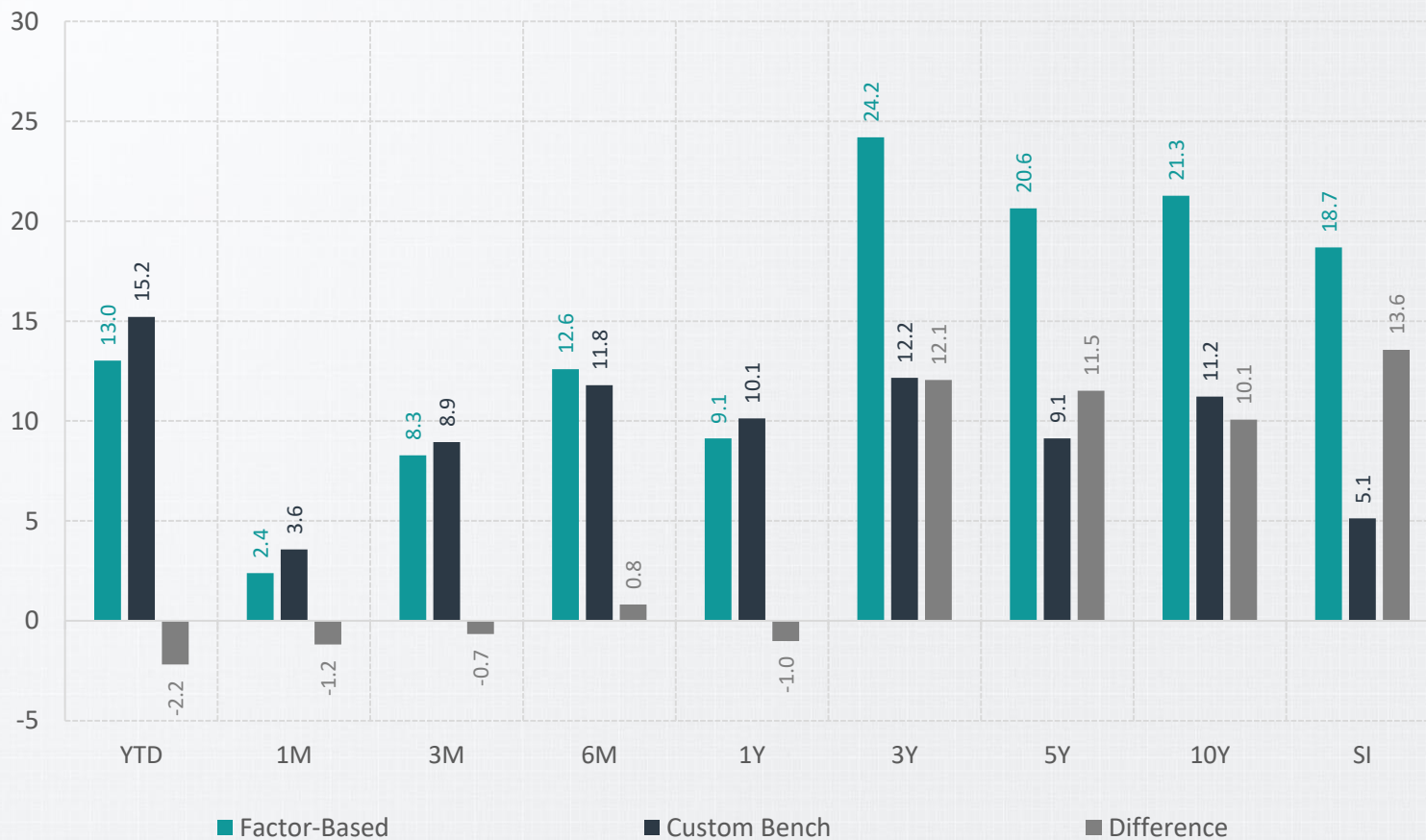
Calendar Returns	2010	2011	2012	2013	2014	2015	2016	2017	2018	YTD
Factor-Based	19.6	10.2	15.9	38.8	19.7	16.5	25.7	26.8	7.7	13.0
Custom Bench	12.5	-6.9	10.1	22.2	12.7	5.3	11.8	13.2	-4.3	15.2
Difference	7.1	17.1	5.8	16.6	7.0	11.3	13.9	13.6	12.0	-2.2

Monthly

Calendar Returns	05-18	06-18	07-18	08-18	09-18	10-18	11-18	12-18	01-19	02-19	03-19	04-19
Factor-Based	2.5	0.9	0.9	3.4	-3.9	-6.6	3.2	-3.5	4.4	3.3	2.4	2.4
Custom Bench	2.0	1.2	1.7	0.4	-0.7	-5.9	2.1	-5.0	5.7	3.1	2.0	3.6
Difference	0.6	-0.3	-0.8	3.0	-3.3	-0.7	1.1	1.5	-1.4	0.2	0.4	-1.2

Statistics

Trailing Performance



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Statistics

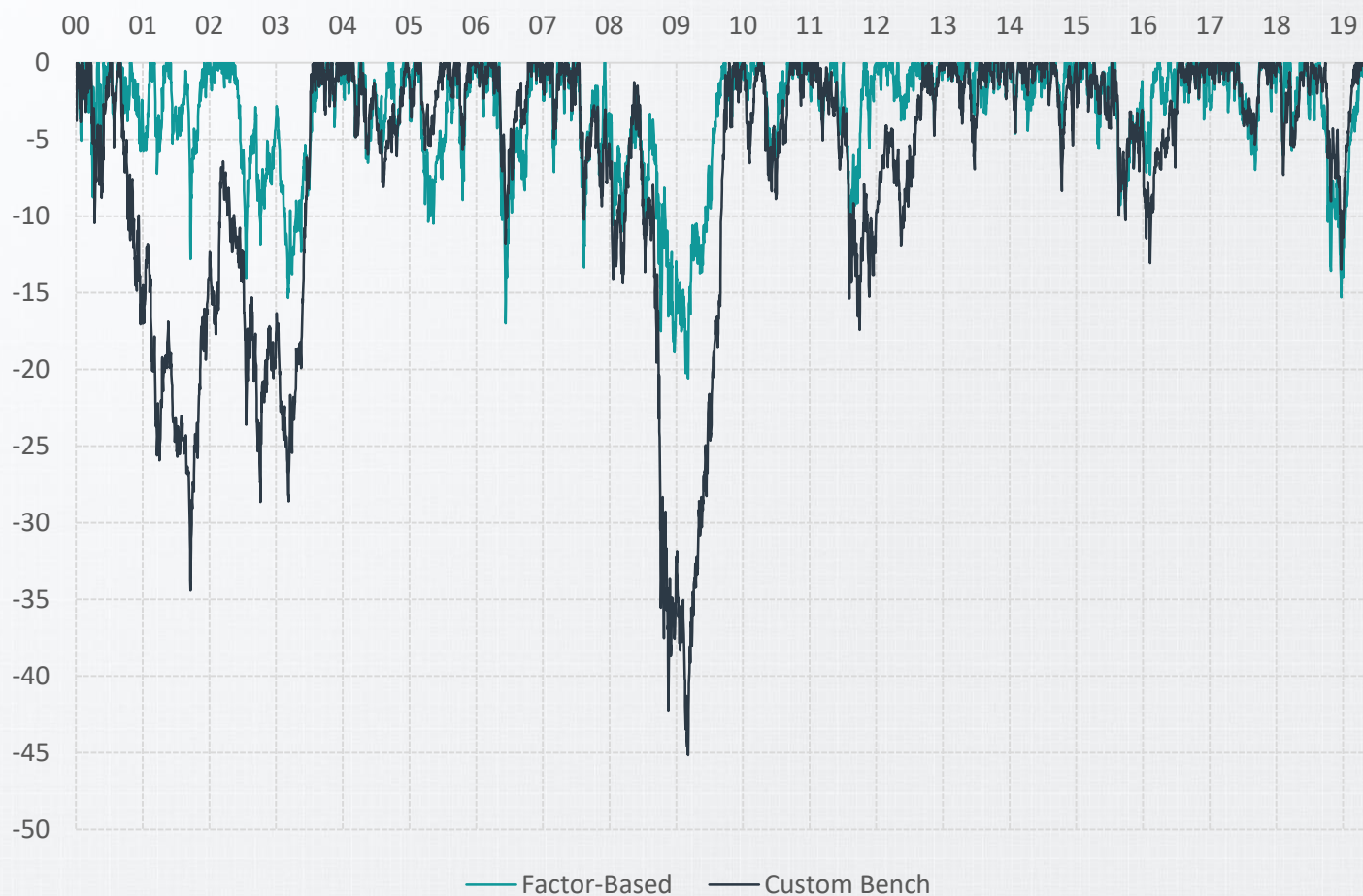
Return & Risk Measurements

Trailing 3 Year	Factor-Based	Custom Bench	Difference
Annualized Return (%)	24.2	12.2	12.1
Standard Deviation (%)	10.3	8.0	2.2
Max Drawdown (%)	-15.3	-13.5	-1.8
Portfolio Turnover	62.6	6.0	56.6
Sharpe Ratio	1.90	1.30	0.61
Sortino Ratio	2.61	1.91	0.70
Index Correlation	0.80	1.00	-0.20
R-Squared	0.65	1.00	-0.35
Beta	1.03	1.00	0.03
Alpha (%) (Annualized)	12.05	0.00	12.05

Since Inception	Factor-Based	Custom Bench	Difference
Annualized Return (%)	18.7	5.1	13.6
Standard Deviation (%)	10.6	11.5	-0.9
Max Drawdown (%)	-20.6	-45.9	25.3
Portfolio Turnover	62.6	6.0	56.6
Sharpe Ratio	1.51	0.35	1.17
Sortino Ratio	2.13	0.44	1.69
Index Correlation	0.65	1.00	-0.35
R-Squared	0.42	1.00	-0.58
Beta	0.60	1.00	-0.40
Alpha (%) (Annualized)	13.57	0.00	13.57

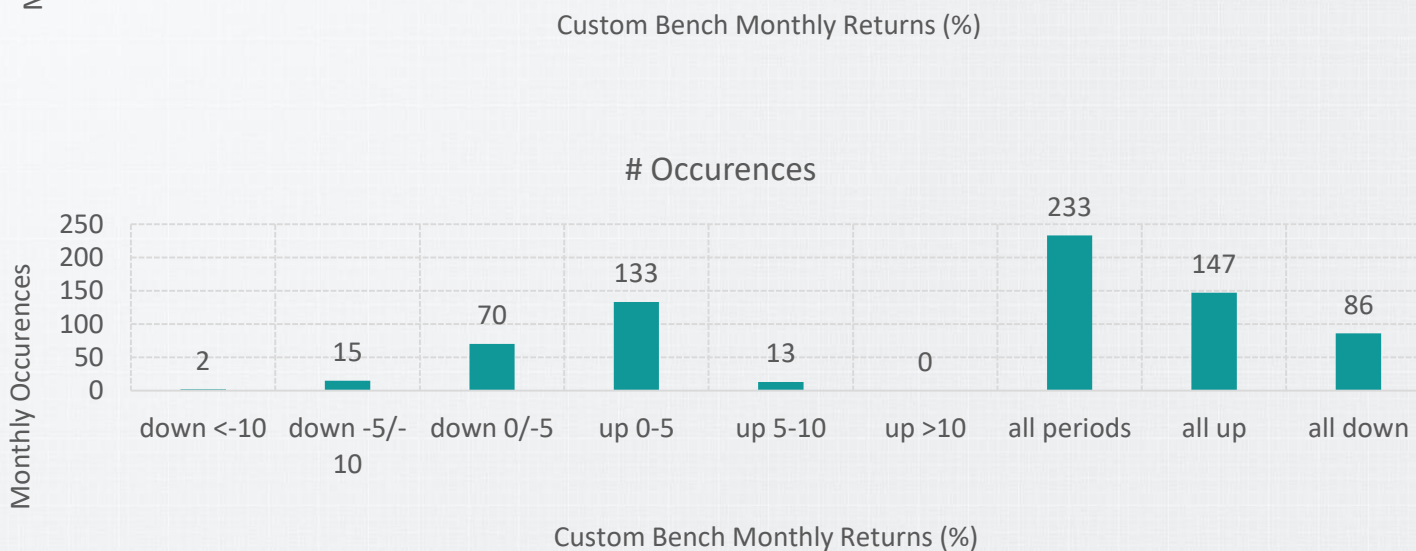
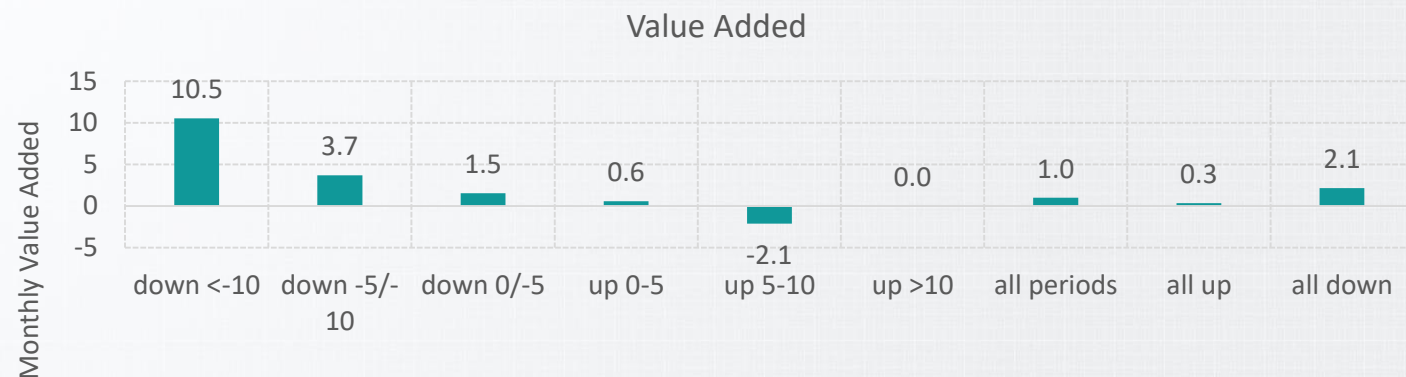
Statistics

Rolling Maximum Drawdown



Statistics

Outperformance in Different Market Conditions



Characteristics

Top Ten Holdings & Fundamentals

Ticker	Weight (%)	Sector
QBR.B:CN	4.8	Telecom
CEO	4.5	Energy
SIMO	4.5	Info Tech
GIL:CN	4.2	Discretionary
CSCO	4.2	Info Tech
HSY	4.1	Staples
EL	4.0	Staples
GSK	3.9	Health Care
GIB.A:CN	3.9	Info Tech
RHHBY	3.9	Health Care

Median	Factor-Based	Custom Bench
Market Cap (\$B)	61.5	12.1
Price / Earnings	13.9	14.8
Price / Book	3.9	2.3
Price / Sales	2.5	2.1
Price / Cash Flow	14.4	11.4
Return on Equity	23.3	12.2
Dividend Yield	2.7	1.9
5Y EPS Growth	9.1	8.9
Debt / Equity	0.7	0.6
5Y Beta	1.02	1.00

Allocation

Sector Weights & Benchmark Deviations

Weights	Factor-Based	Custom Bench	Deviations
Info Tech	28.9	11.3	17.6
Discretionary	14.9	8.5	6.4
Health Care	14.5	8.4	6.1
Materials	11.5	7.2	4.3
Staples	8.2	6.9	1.3
Telecom	7.4	7.6	-0.2
Utilities	0.0	3.6	-3.6
Industrials	5.3	10.7	-5.5
Energy	4.5	10.3	-5.8
Financials	3.7	25.5	-21.9

WHO



Who We Are

Factor-Based (FB)



IN A NUTSHELL...

Factor-Based (FB) is a financial research firm that specializes mostly in equities for private, investment advisors and institutional clients. We are dedicated to produce exceptional risk adjusted returns for our investors by strictly adhering to factor-based investing methods.

Disclosures

Disclaimer and Trademarks Notice

The Factor-Based Best Ideas Equity Model Portfolio Strategy is not and should not be perceived as an investment fund. Any information provided by Factor-Based (FB) or included in the Strategy is not intended as and does not constitute investment advice, legal advice, tax advice, or an offer to sell any security, or as a recommendation regarding any particular security in any jurisdiction.

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