



# Factor Performance & Research Update

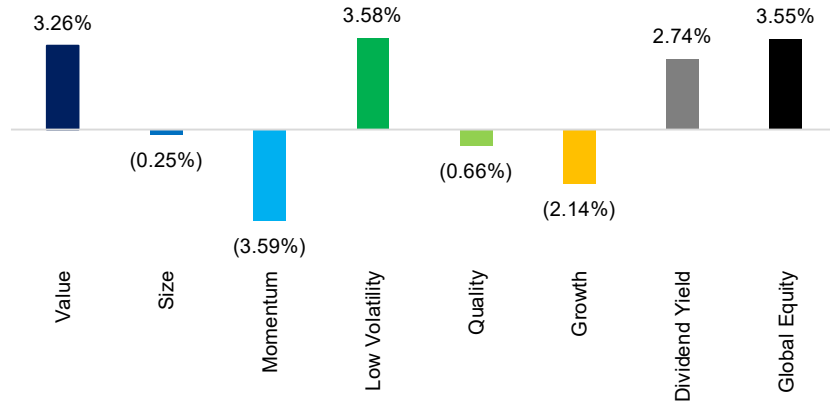
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## Factor Performance Update

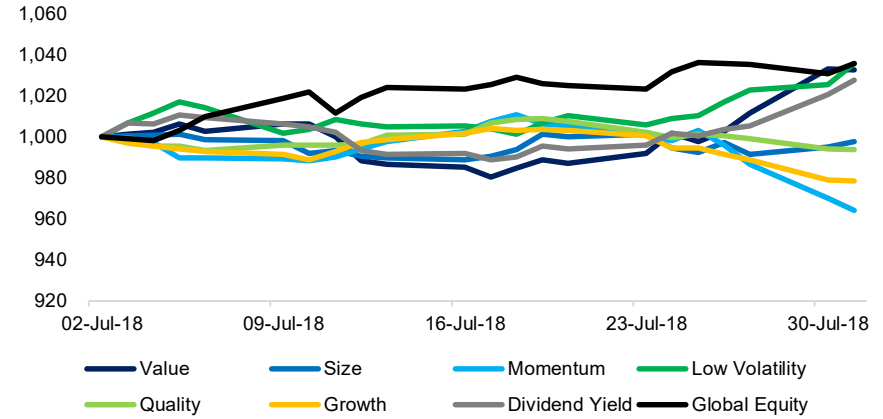
# Factor Performance Update: July 2018

## Out of Momentum and Into Value

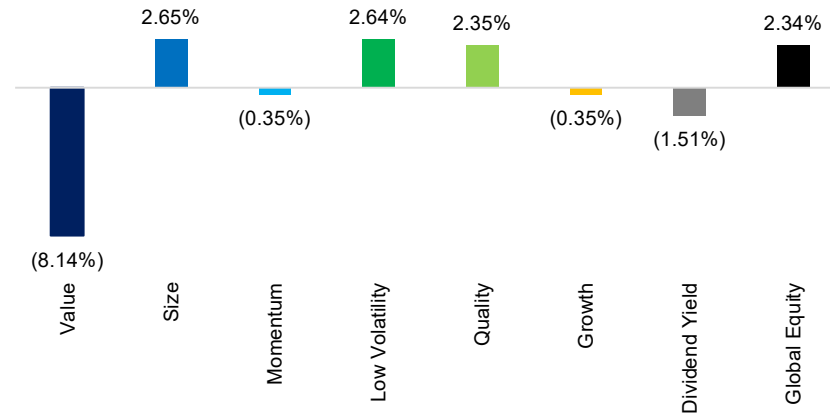
Global Equity Factors (Long-Short): Last Month



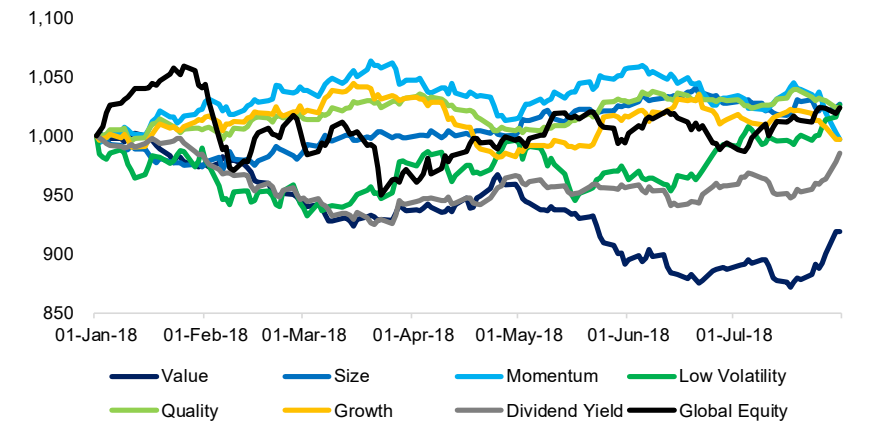
Global Equity Factors (Long-Short): Last Month



Global Equity Factors (Long-Short): Year to Date



Global Equity Factors (Long-Short): Year to Date



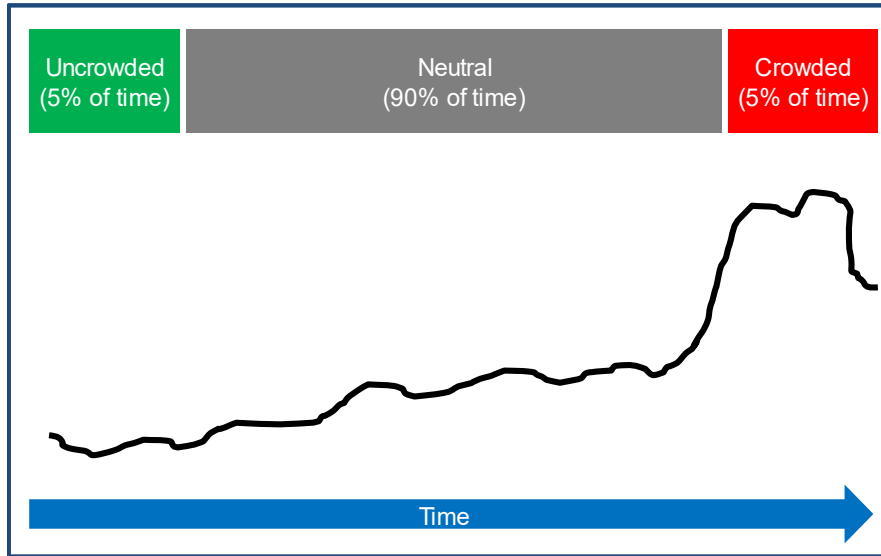
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Research Topic 1:  
Factor Crowding Model

# Factor Crowding Model

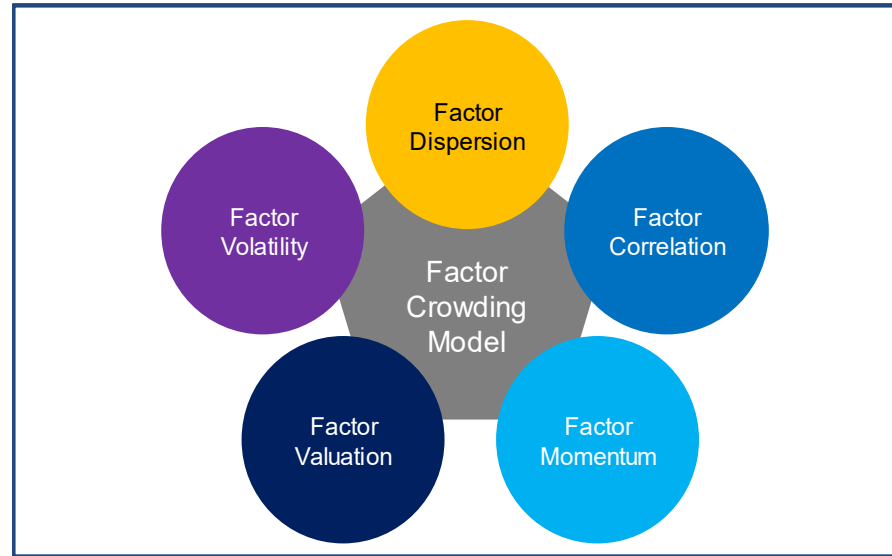
## Measuring Factor Crowding via Real-Time Market-Derived Indicators

### Typical Performance Life Cycle



- Crowding is not negative per se and is required for positive factor performance
- Drawdowns can occur even if factor is not crowded

### Factor Crowding Model

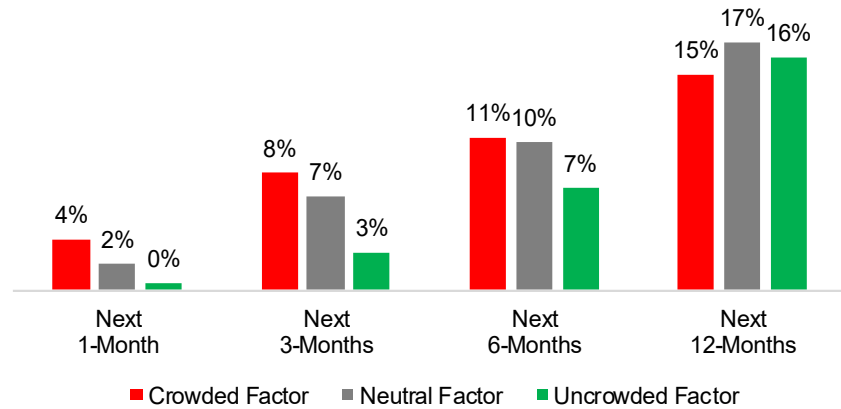


- Crowding can be measured via fund flows, stock ownership, short interest, market-derived indicators, etc
  - Only market-derived indicators are real-time
- Factor crowding model combines five metrics
- Not every metric is effective for measuring crowding on a stand-alone basis, but they complement each other

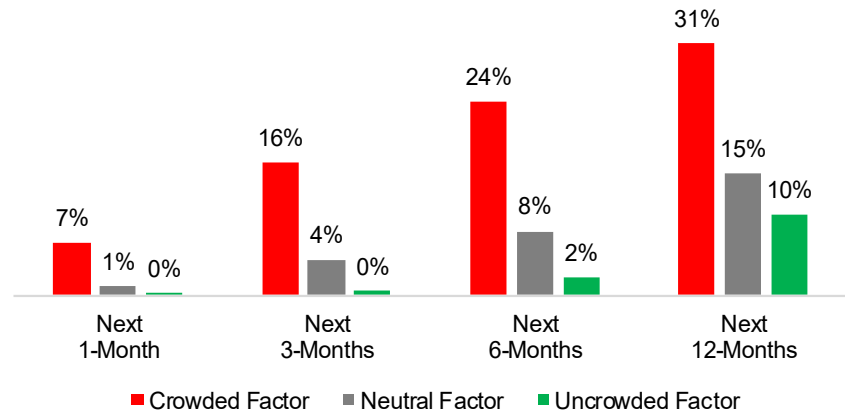
# Factor Crowding Model

## Measuring Probability of a 15% or Larger Drawdown via Different Metrics (I / II)

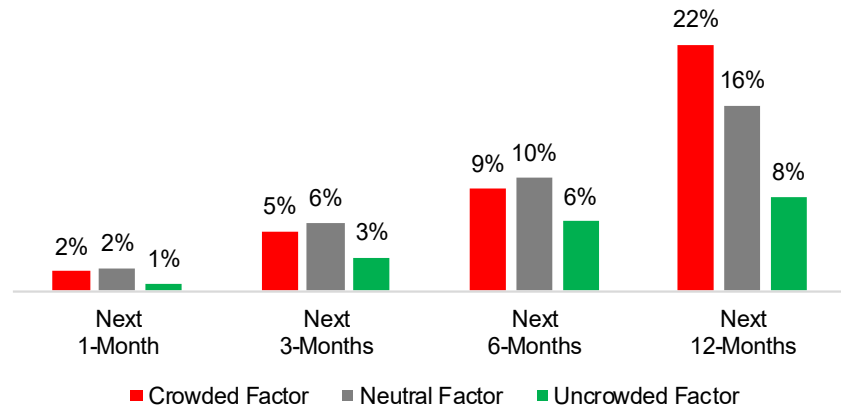
Factor Volatility (1 / 5)



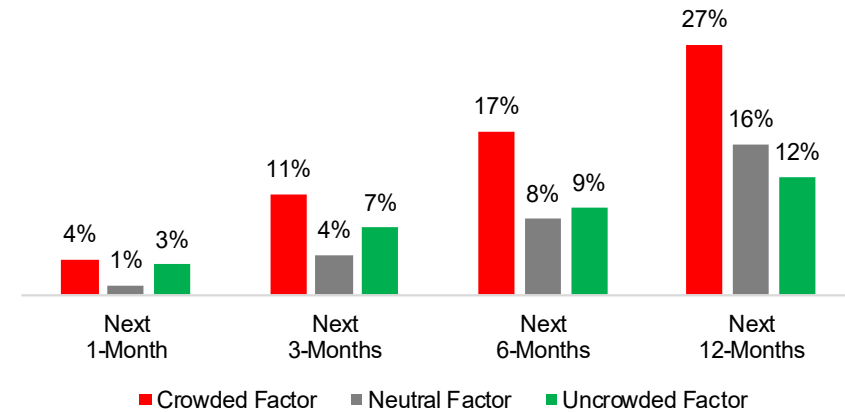
Factor Dispersion (2 / 5)



Factor Correlation (3 / 5)



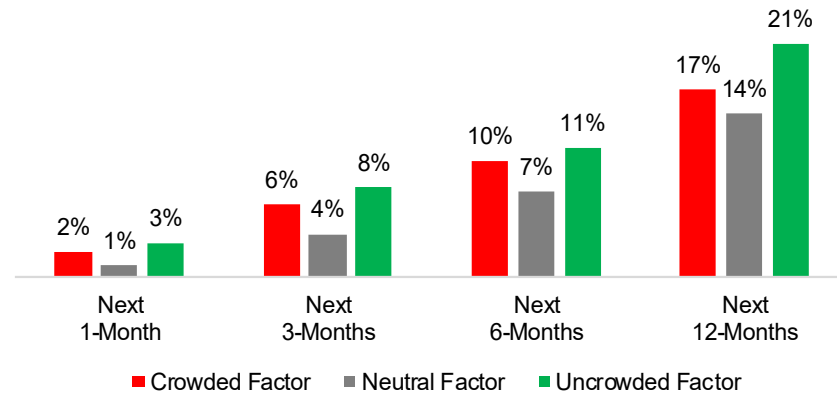
Factor Momentum (4 / 5)



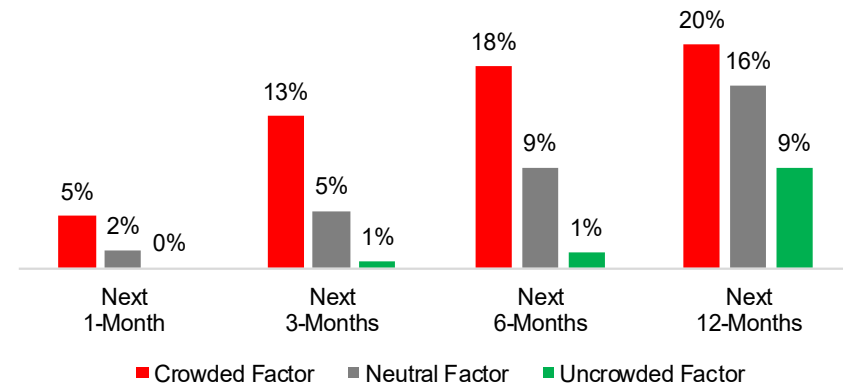
## Factor Crowding Model

### Measuring Probability of a 15% or Larger Drawdown via Different Metrics (II / II)

Factor Valuation (5 / 5)



Multi-Metric Crowding Model (15% or Larger Drawdown)

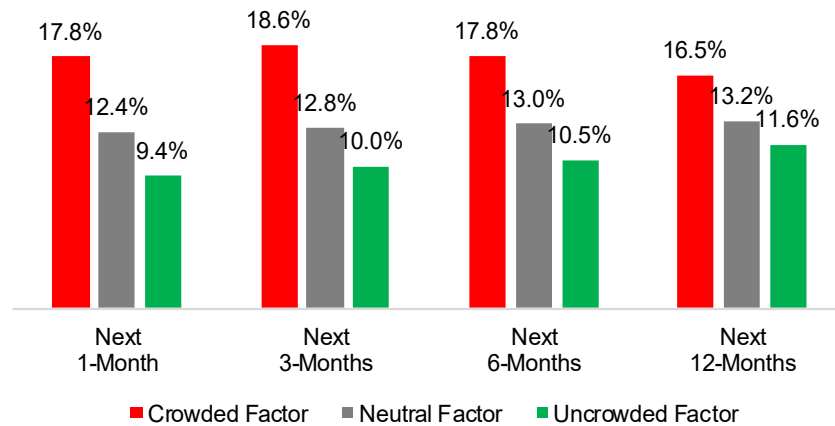


- Multi-metric factor crowding model highlights a linear increase in the frequency of drawdowns of 15% or larger from uncrowded to crowded factors across different time frames
- Factor crowding is defined that factors are majority of time in neutral state (90%), only rarely crowded or uncrowded

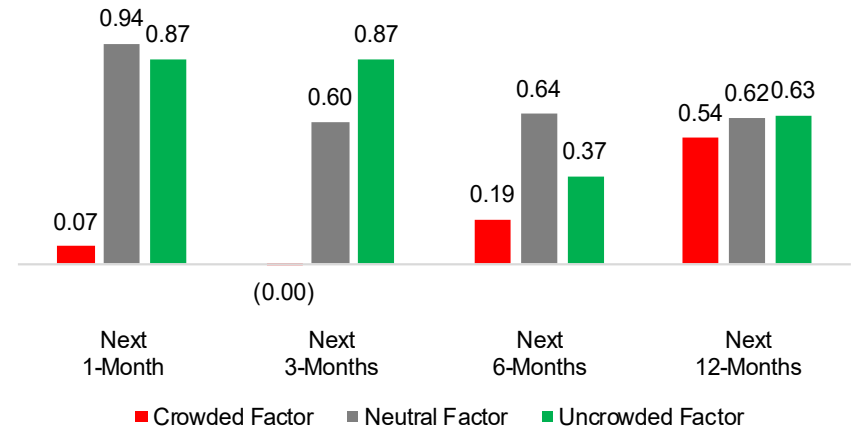
# Factor Crowding Model

## Crowded Factors Exhibit Higher Volatility & Lower Sharpe Ratios

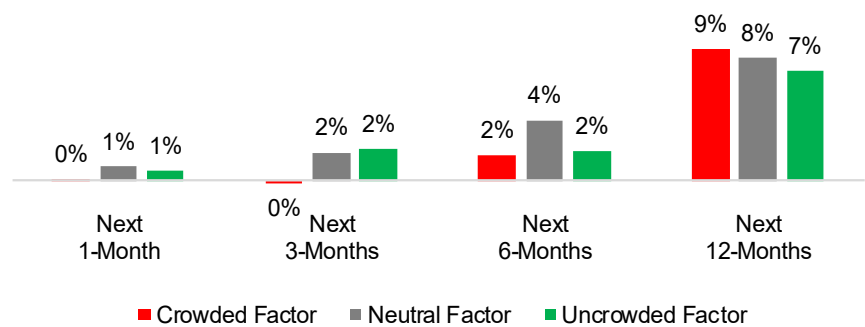
Forward Factor Volatility (1992 – 2018)



Forward Sharpe Ratios (1992 – 2018)



Forward Factor Returns (1992 – 2018)



Comment

- Crowded factors consistently exhibit higher forward volatility than uncrowded factors
- Crowding has a mixed impact on returns
  - Although uncrowded may sound attractive, crowding is required for factor performance
  - Crowded factors often continue their trajectory after experiencing a drawdown



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Research Topic 2:  
Stock Portfolio Optimisation

# Stock Portfolio Optimisation (I / II)

## Measuring & Tuning Factor Exposure

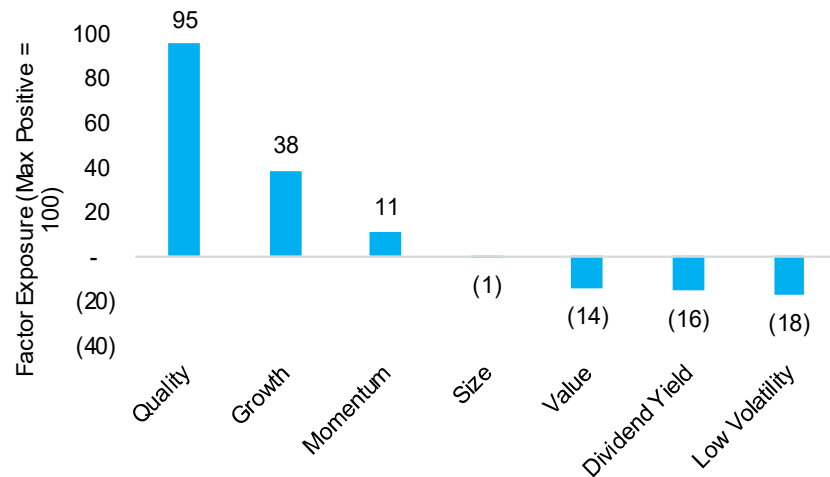
### Comment

- Portfolios frequently contain stocks representing duplicate factor risks or insignificant weights
- An optimisation process focused on factor exposure can increase the portfolio efficiency
- Case study of an investor with a Quality-focused portfolio who wants to increase exposure to the Value factor

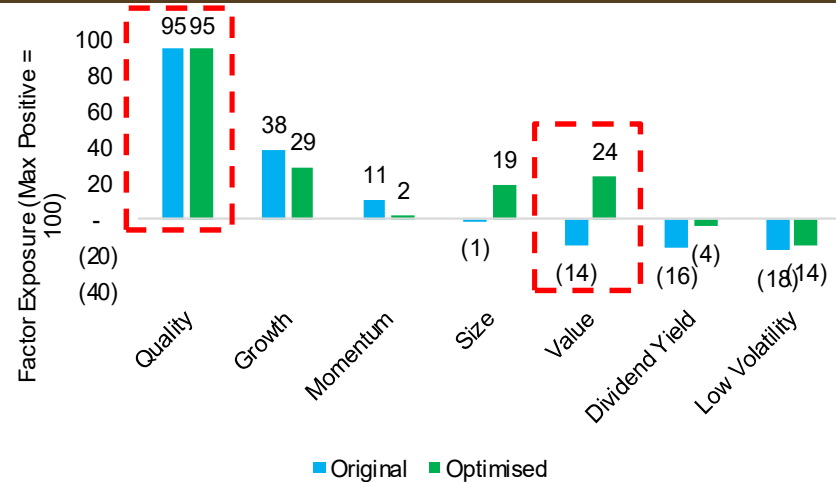
### Optimisation Process

- An optimisation process can be applied to the stock portfolio with the following objectives:
  - Maintain the high Quality factor exposure
  - Increase the Value factor exposure
  - Sell stocks with duplicate factor exposure
  - Sell stocks with insignificant portfolio weights

### Factor Exposure Analysis: Original Stock Portfolio



### Factor Exposure Analysis: Original vs Optimised Portfolio



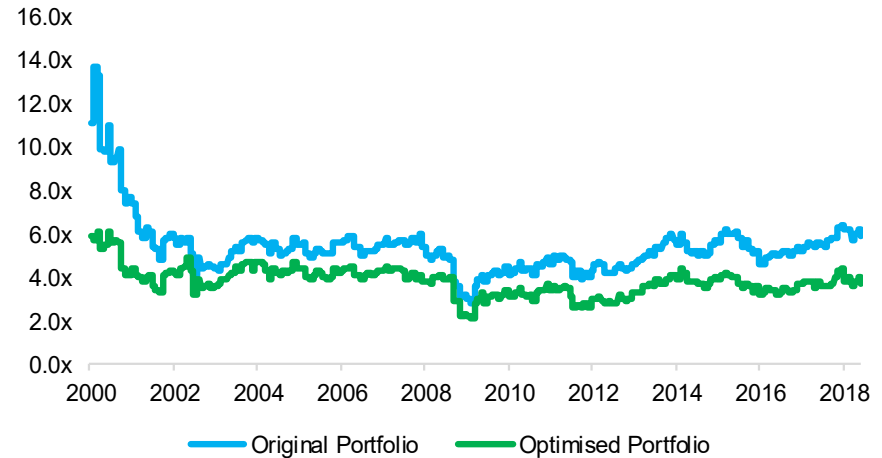
# Stock Portfolio Optimisation (II / II)

## Optimisation Leads to a More Attractive Portfolio

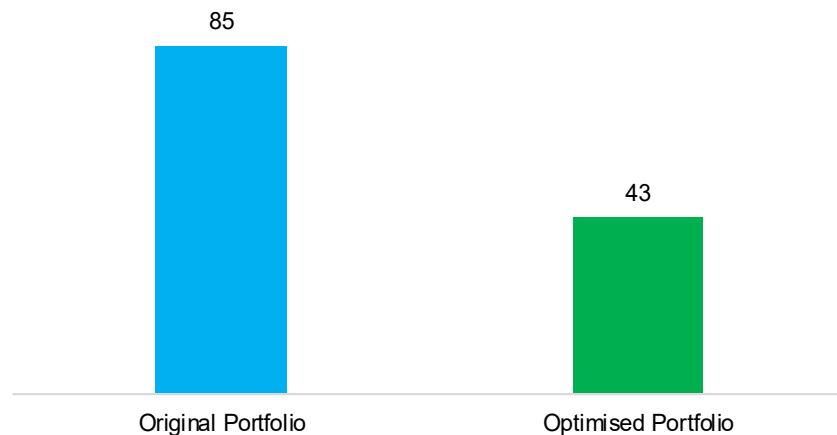
### Comment

- Valuation of the stock portfolio has decreased in terms of PB multiples
  - More attractive, given same Quality exposure
- Number of stocks was reduced, but still sufficiently diversified
  - Better allocation of portfolio managers time
- Increasing or decreasing factor exposure requires a view on expected factor performance and risks

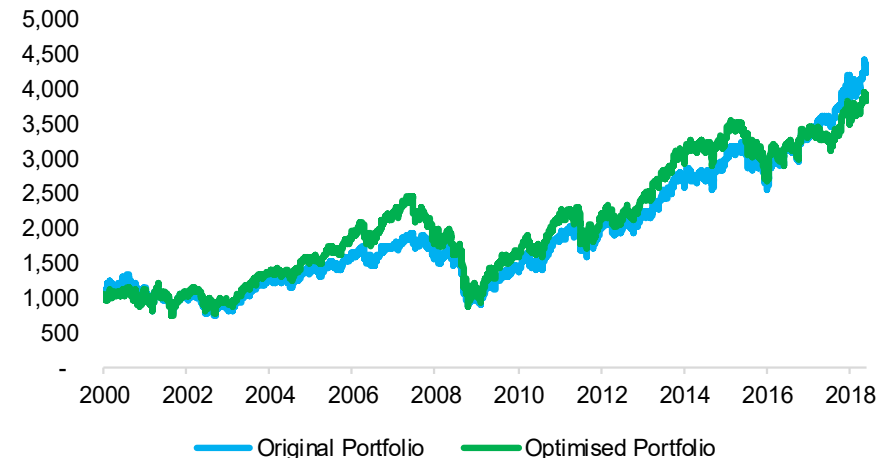
### Portfolio Valuation Measured by Price-to-Book Multiples



### Number of Stocks in Portfolio



### Performance Comparison



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Research Topic 3:  
Impact of Single Stocks on Factor Returns

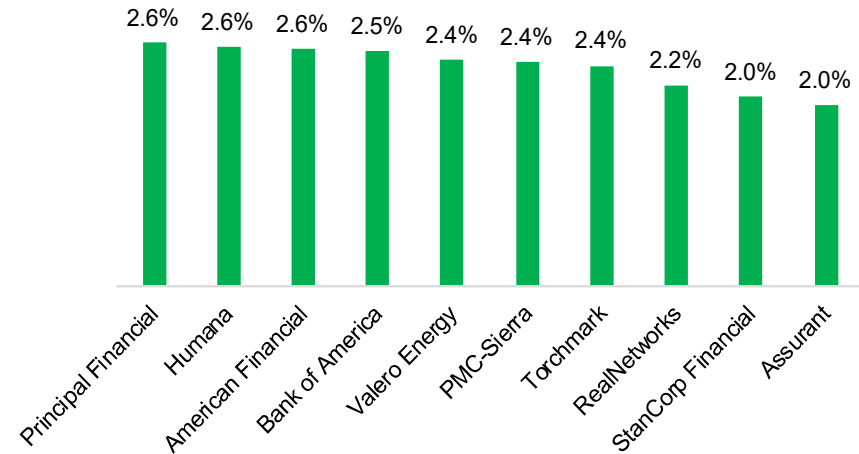
# Impact of Single Stocks on Factor Returns (I / II)

## Do Single Stocks Matter for Factor Investors?

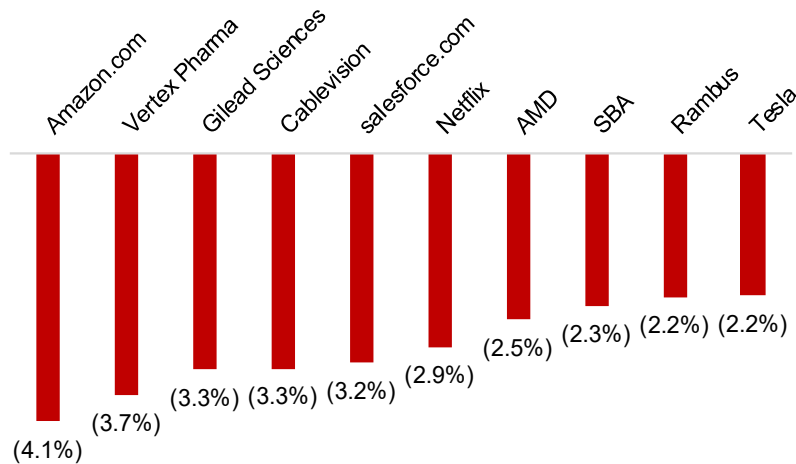
### Comment

- Factor portfolios are typically created by equal weighting stocks
- The impact of single stocks is therefore reduced compared to market-cap weighted indices
- Most positive contributors to the Value factor were Financial stocks while Tech & Biotech were the most negative contributors

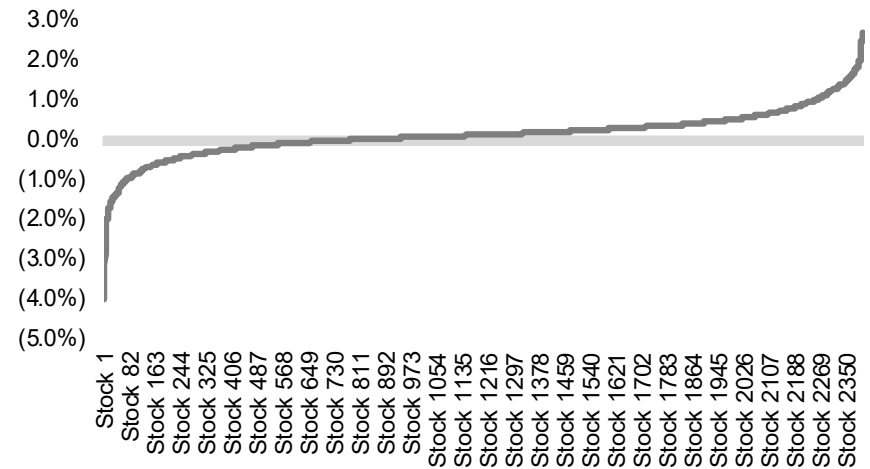
### Value Factor US (L-S) (2000 - 2018): Top 10 Return Contributors



### Value Factor (L-S) (2000 - 2018): Bottom 10 Return Contributors



### Value Factor US (L-S) (2000 - 2018): Single Stock Contributions



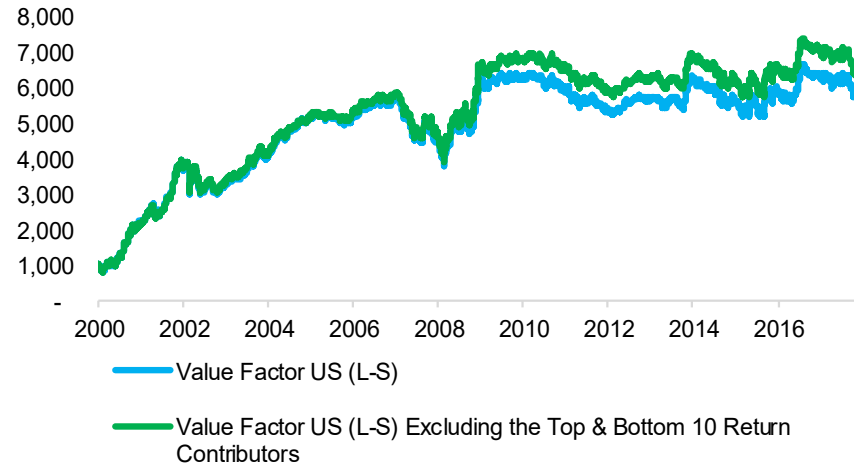
## Impact of Single Stocks on Factor Returns (II / II)

### FAANG Stocks Had a Meaningful Impact on Factor Returns

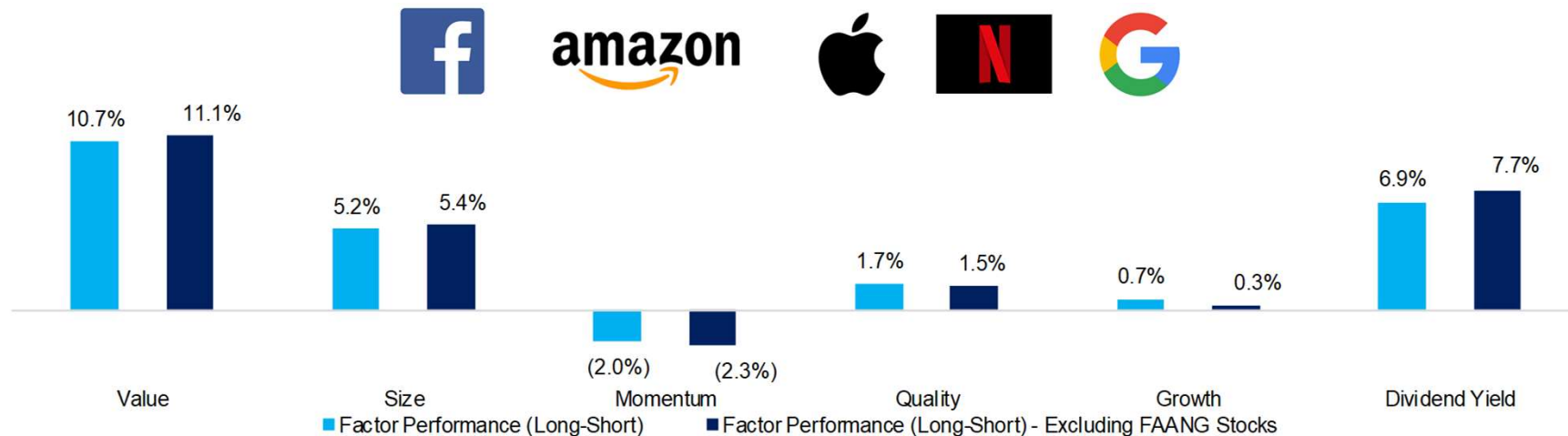
#### Comment

- Excluding top & bottom 10 contributors has no significant impact as they net each other
- The FAANG stocks impacted factors differently
  - Negative: Value, Size & Dividend Yield as they are expensive, large and pay low or zero dividends
  - Positive: Momentum, Quality & Growth as they showed strong performance, have little leverage and health margins, and generated strong sales and earnings growth

#### Value Factor US: Excl. the Top & Bottom 10 Return Contributors



#### Factor Returns Per Annum (US: 2000-2018): Excluding FAANG Stocks



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Launch of Smart Beta ETF Ranking  
& ETF Analyser

## New Investor Tools



### Smart Beta ETF Ranking

Find the smart beta ETFs  
with the highest factor  
exposure



### ETF Analyser

Analyse the factor  
exposure of 1,500+  
US ETFs



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Q&A

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