

# Quantitative Investing

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A systematic approach to stock selection  
based on statistical data analysis

Research presented by:



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# Agenda

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## **1. Introduction**

- a. Quantitative Investing Drivers
- b. Quantitative Investment Strategies

## **2. Traditional Factor Investing**

- a. French/Fama Five-Factor Model
- b. Develop and Test Investment Hypothesis

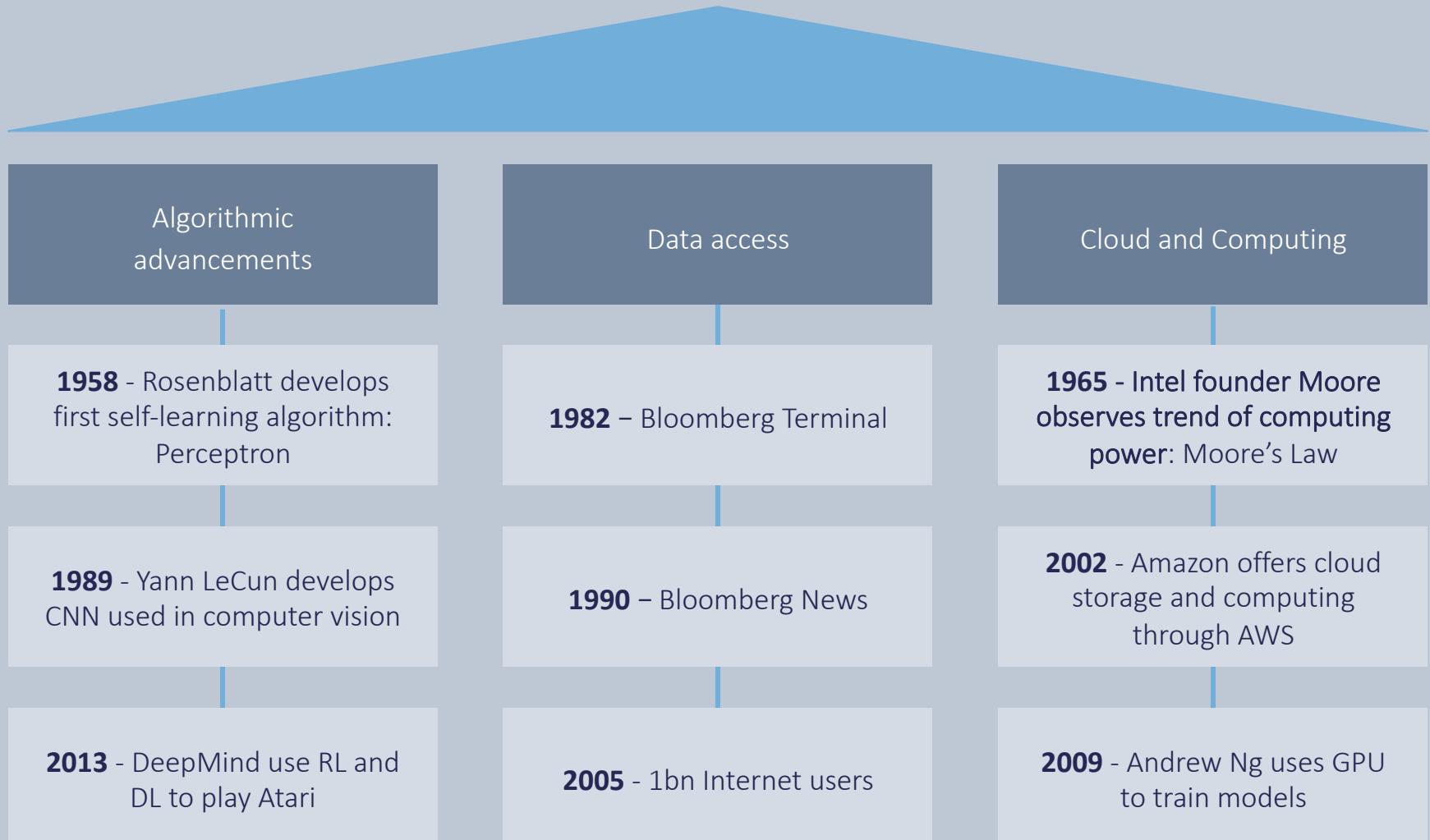
## **3. Alternative Factor Investing**

- a. Natural Language Processing and Computer Vision enabled Factor Investing

## **4. Industry Insight - Bloomberg Alternative Data Portfolio**

## **5. Questions**

# From 1958 to today – Quantitative Investing Drivers



# Statistically significant Investment Strategies

“Factor based strategies are estimated at **USD 1.9 trillion** and are projected to grow to **USD 3.4 trillion by 2022.**” Blackrock

## 1

### Traditional Factor Investing

- CAPM and DCF factor based strategies to screen specific investment universe and its relative investment valuations
- **French/Fama Five Factor** strategies identify historic outperformance of specific factor constellations tracking relative to Market Index
- Deep Portfolio Construction: Factor based fund selection and allocation of resources among funds using Deep Learning

## 2

### Alternative Factor Investing

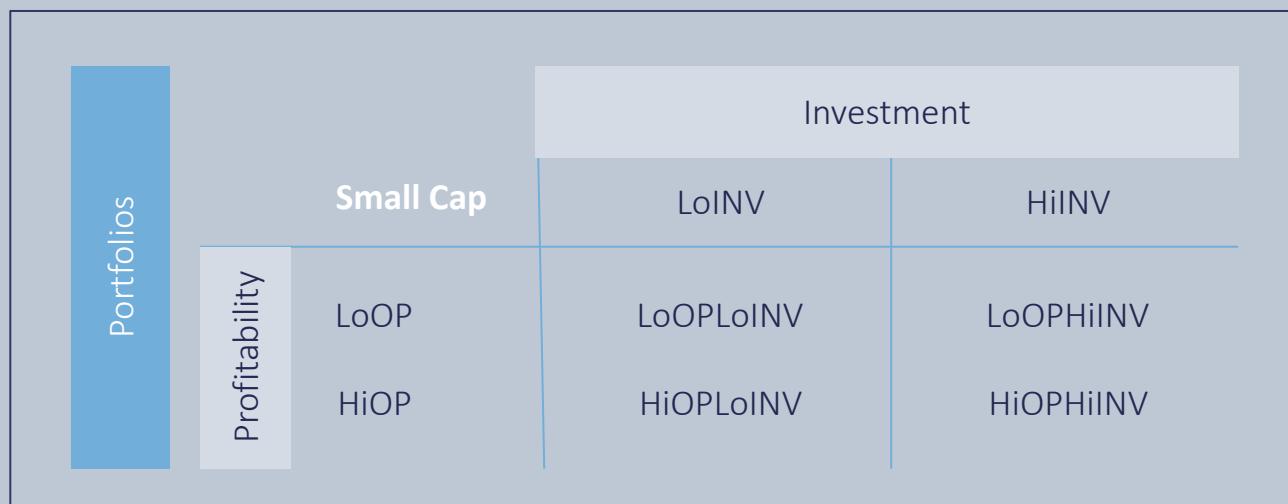
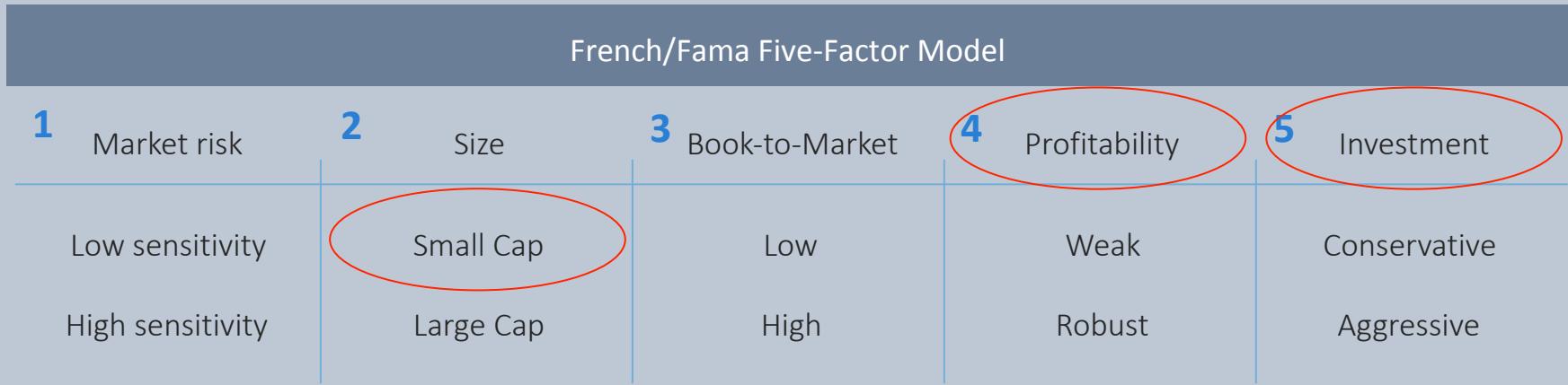
- **Computer Vision and Natural Language Processing enabled access** to Alternative Factor, i.e.
  - Satellite images
  - News and social media sentiment
- Access to proprietary or 3rd party data collection, i.e.
  - ESG data
  - Global vessel tracking
  - App downloads and usage information

## 3

### Systematic macro Investing

- Sector specific macro regime factors, i.e.
  - Volatility
  - GDP growth
  - Inflation expectations
  - Commodity pricing
- Identification of **statistically significant patterns between macro factors and asset prices**
- Regime breakdown indicator flags the shift to new factors driving the market

# French/Fama Five-Factor Model



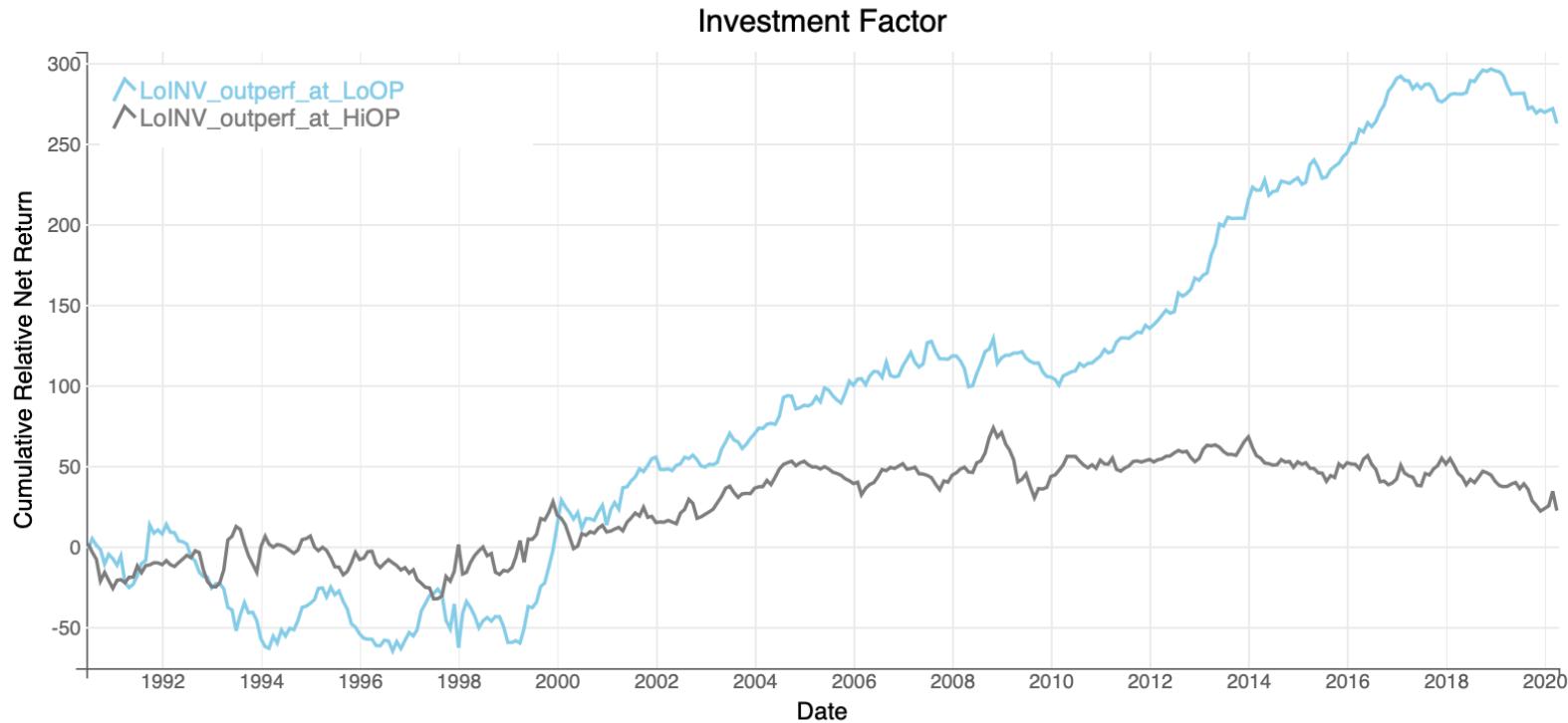
# Investment Hypothesis – Investment Factor

## Investment Factor

Difference between returns on diversified portfolios with stocks showing conservative vs aggressive investment behavior

## Investment Hypothesis

Stocks of small cap companies with conservative investment behavior have historically outperformed those with a high total asset growth over long term.



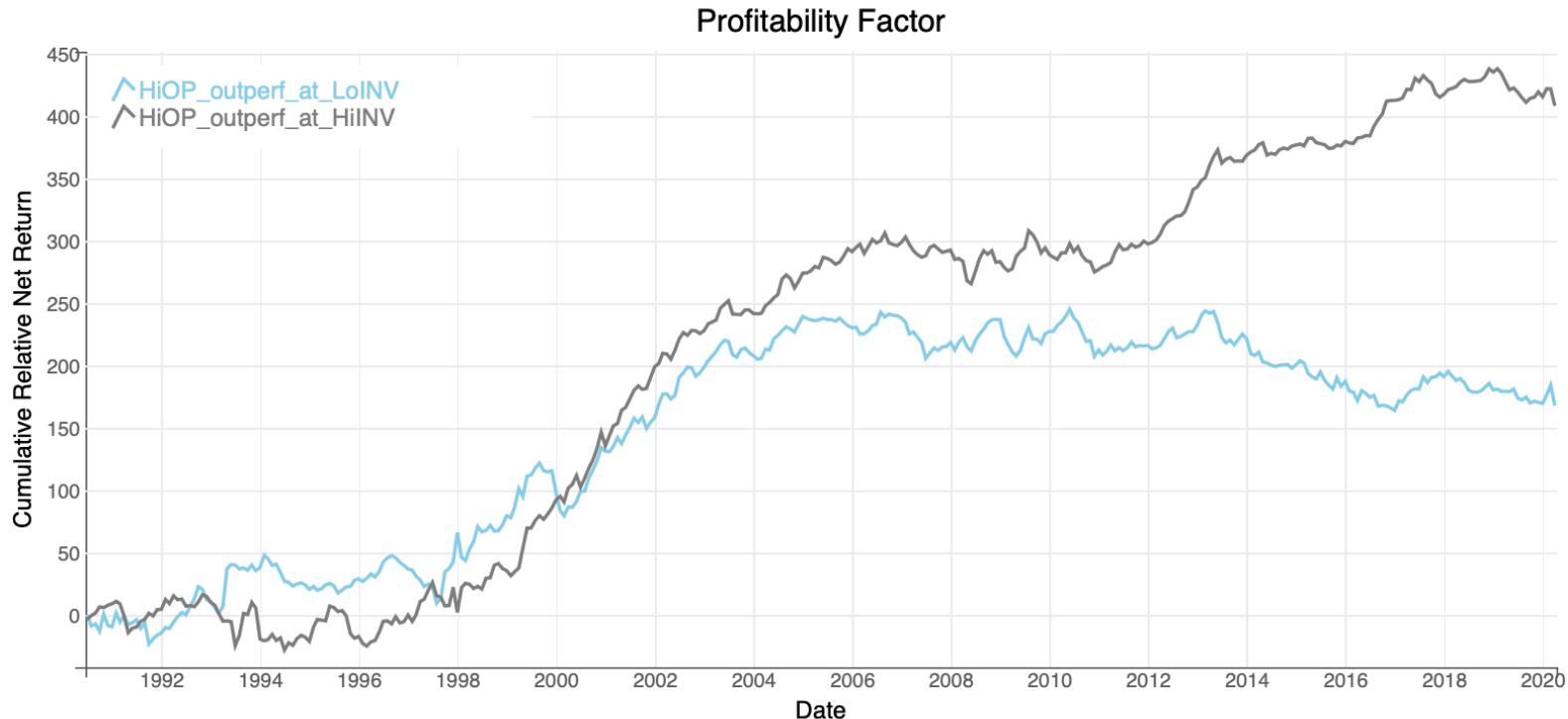
# Investment Hypothesis – Profitability Factor

## Profitability Factor

Difference between returns on diversified portfolios of stocks with robust and weak operating profitability.

## Investment Hypothesis

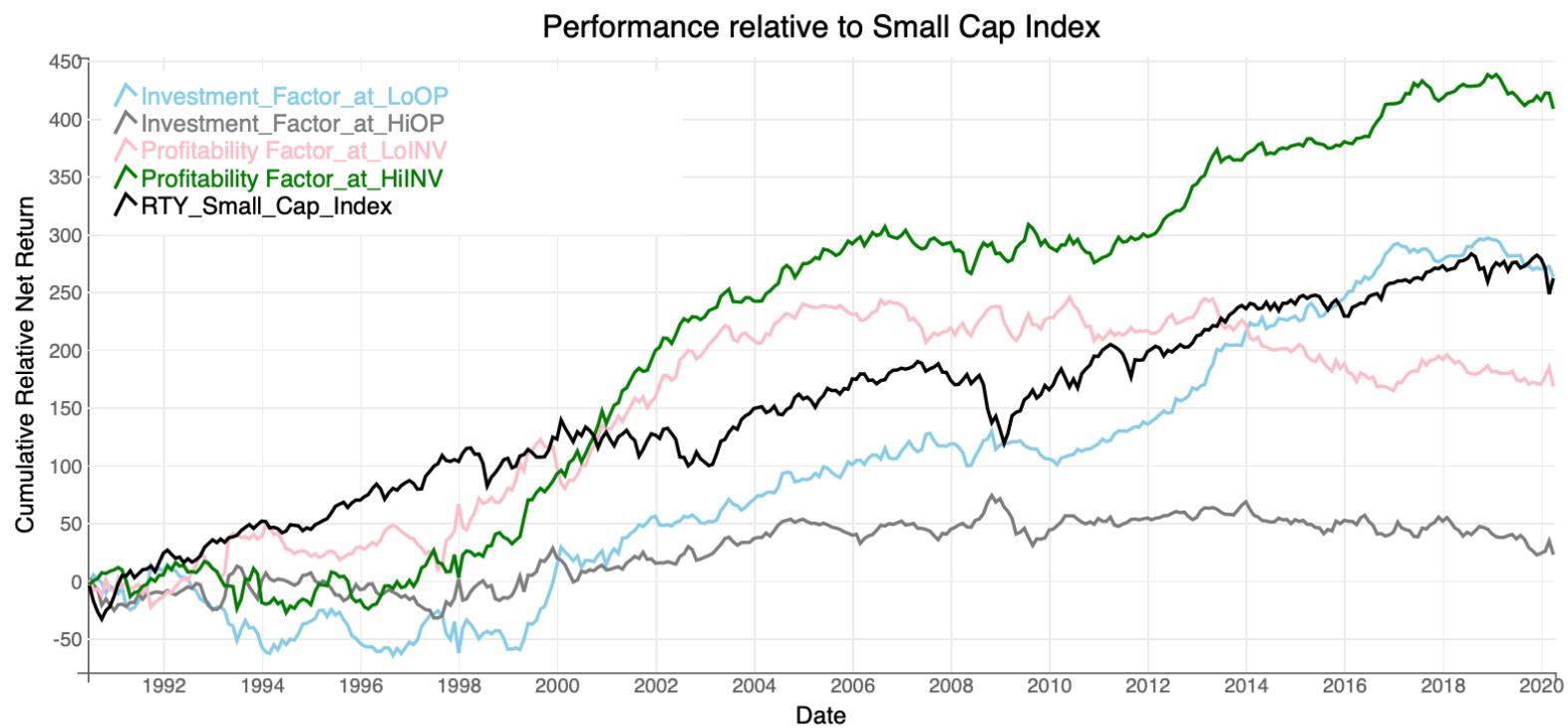
Stocks of small cap companies with a high profitability have historically outperformed those with a weak operating profitability over long term.



# Investment Hypothesis – Testing

## Testing Tools

- ✓ Performance testing relative to Market Index over time
- ✓ Investigation of historical stock outliers
- ✓ Momentum anomaly testing
- ✓ Factor strategy testing across asset classes, markets and time periods



# NLP and Computer Vision enabled Alternative Data Access



## Natural Language Processing (NLP) enabled pattern recognition in news data

### News momentum strategy

Quantify short term momentum from sentiment analysis on news and social media activity of market moving influencer

### Event driven strategy

Quantify key drivers for extreme price moves from news on Litigation, Mergers, Regulatory changes and Macro factors

### ESG strategy

Quantify ESG score by analyzing unstructured data, such as company filings and news data on ESG controversy topics



## Computer Vision enabled pattern recognition in news data

### Commodities trading

Quantify global commodities demand (i.e. crude oil) from satellite Images tracking inventory and vessel traffic real time.

### Macro trading

Quantify short term momentum and wide-ranging market implications from computer vision enabled sentiment analysis on Central bank video statements.

# Bloomberg Alternative Data Portfolio

**Demand for alternative data has skyrocketed** as firms have integrated sophisticated insights into their investment strategies. Bloomberg's alternative data portfolio includes over 60 third-party providers. In conjunction with Bloomberg's traditional financial **data investors can make informed and confident investment decisions.**

Over 60 third-party alternative data providers



- Global vessel tracking
- Oil storage capacity, sourced from satellites
- Supply chain data
- Government procurement and public contracts

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- App downloads and usage information
  - Social media sentiment about brands
  - Corporate flight activity
  - Prescription retail data

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- Fed communication indicators
  - News sentiment
  - ESG consensus scores
  - Government procurement and public contracts

Faster time-to-market

- Access data with **easy to use formats and standard identifiers** that help you test datasets and extract insights faster
- Non-traditional data to complement traditional investment hypothesis to help **better inform investment decisions** and uncover opportunities and build new strategies
- **Seamless access and integration** of extensive collection of alternative data through Bloomberg's Enterprise Access Point.

## Questions?

### Contact

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