



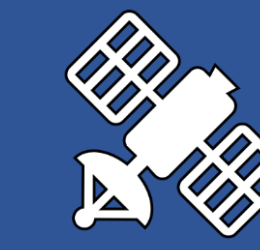
# Unlevelling the Playing Field:

## The Investment Value and Capital Market Consequences of Alternative Data

Marcus Painter | University of Kentucky



### Motivation



**Alternative data is any non-traditional data that can be used in the investment process**

- Satellite imagery
- Social media sentiment analysis
- Credit card transaction data
- Geo-location data

**Use of alternative data has grown tremendously in recent years.**

**\$2 - \$3 Billion**

Amount spent annually on alternative data by investment managers

**80%**

Percent of asset managers planning to increase investments in big data

**The release of this data has important implications for financial markets**

- Can profitable trading strategies be generated from alternative data?
- How does the introduction of alternative data affect the trading behavior of investors (institutional vs. individual)?
- How is firm liquidity affected by alternative data?



### Methodology



**Orbital Insight**

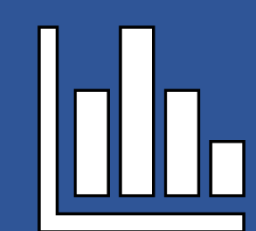
**Data: parking lot car counts from Orbital Insight**

- Leading satellite imagery data provider
  - Use machine learning to convert satellite images into quantitative data
- 163 US companies from 2010 to 2017
- 70+ asset managers as clients
  - Majority hedge funds

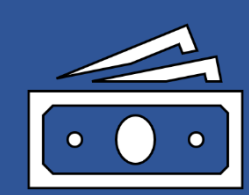
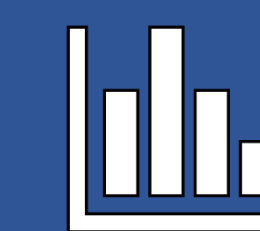


**Identification: Orbital Insight began selling this data to investors at different points in time, allowing me to explore the causal effects of the dissemination of alternative data**

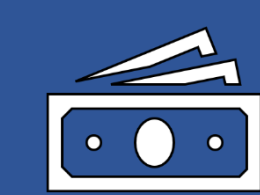
- Summer 2015: 54 firms released
- Summer 2016: 41 firms released
- Start of 2017: 33 firms released
- 35 firms still in beta
- Treated: firms whose data is released
- Control: firms whose data is yet to be released



### Results

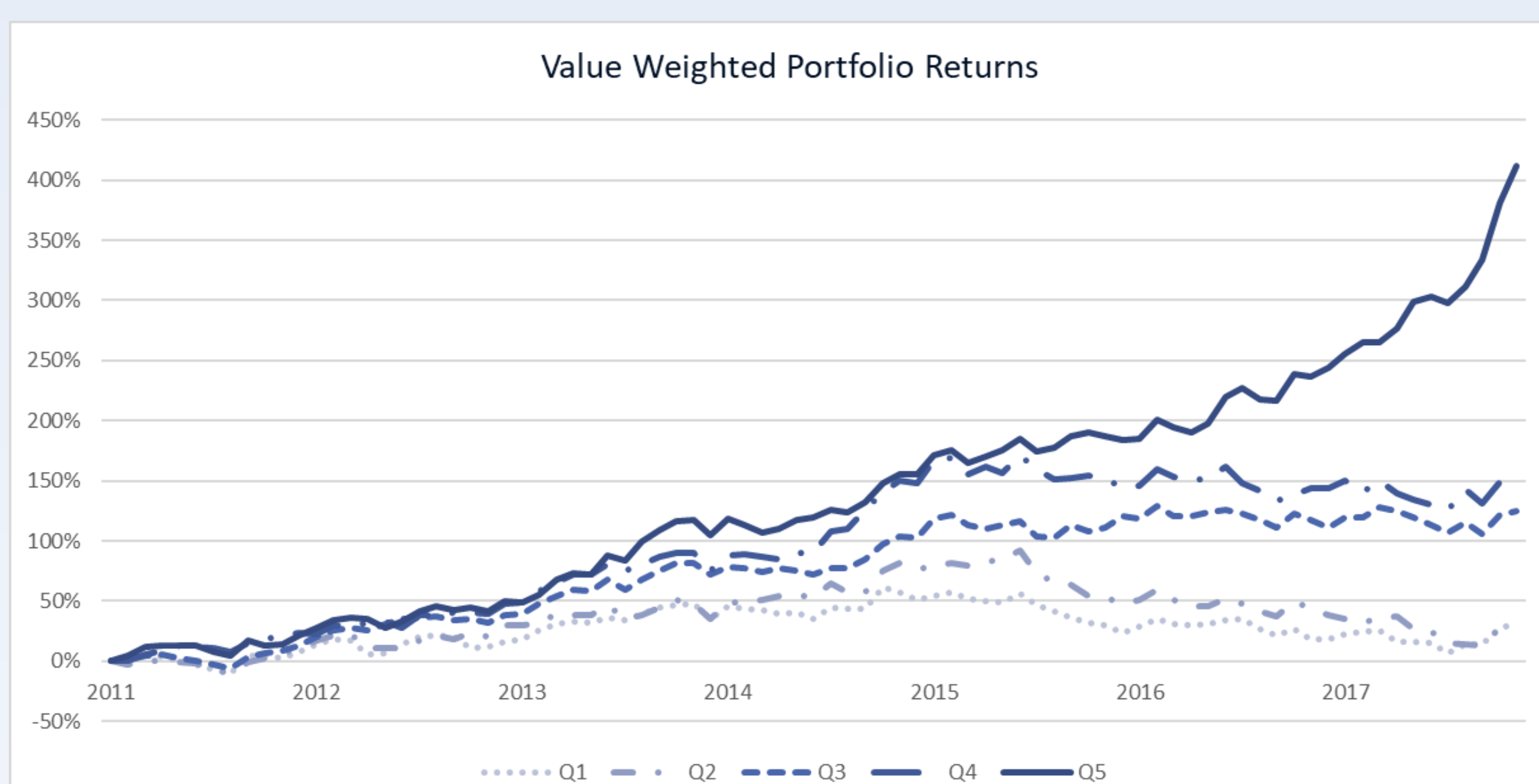
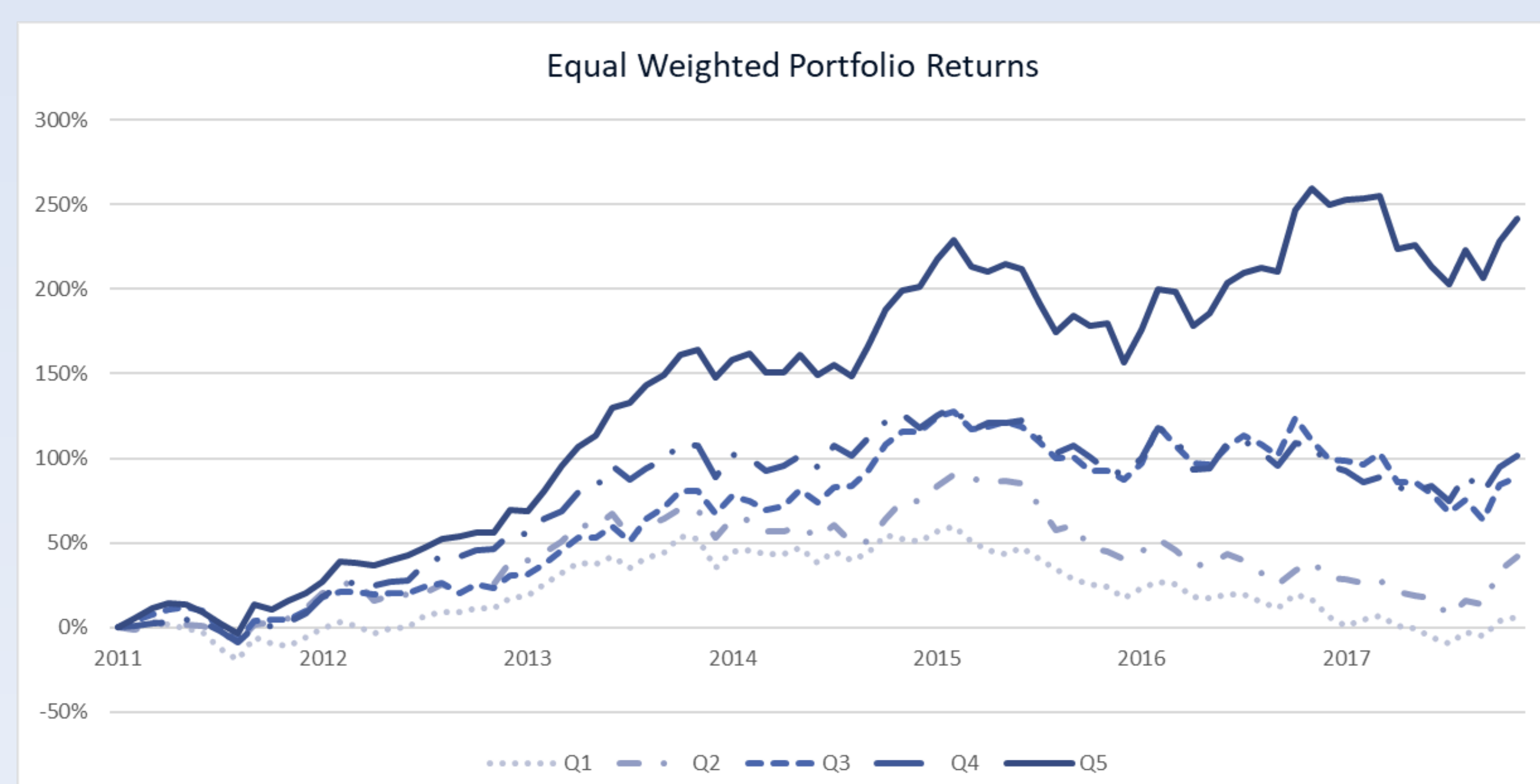


#### Investment Value



**1.6%**

**Monthly six-factor alpha generated from a long-short trading strategy based on year-over-year car count growth**



**The profitability of the trading strategy persists after the data is disseminated, even for stocks with lower limits to arbitrage**



#### Capital Market Consequences



##### Sophisticated Investors

**After the release of satellite data, hedge fund trades are more correlated with car count growth and are more profitable in affected stocks**

**2.02%**

The increase in abnormal returns associated with an interquartile increase in hedge fund holdings in the post period relative to the pre period

Data source: 13f. Note: no change in profitability seen for non-hedge fund institutional investors.

##### Individual Investors

**Individual investor demand becomes less correlated with growth in car count and less profitable in affected stocks.**

**-4.7bps**

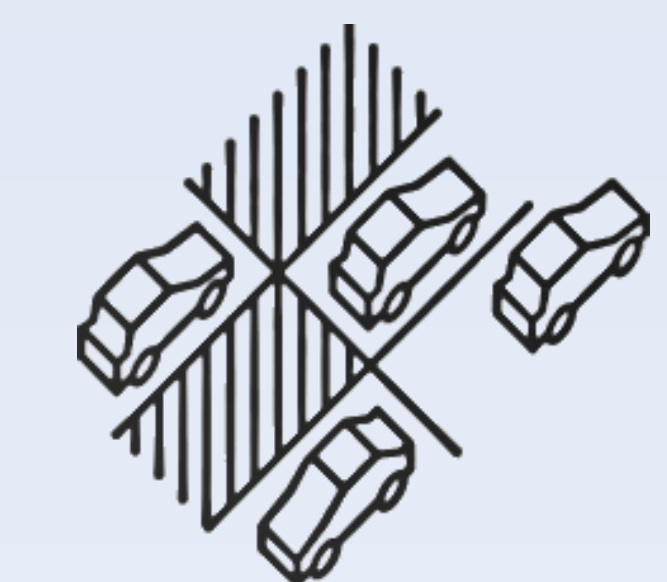
The decrease in announcement returns associated with 1% increase in individual investor demand in the post period relative to the pre period

Data source: TAQ. Individual investor initiated trades are identified following Boehmer, Jones, and Zhang (2018)

##### Firm Liquidity

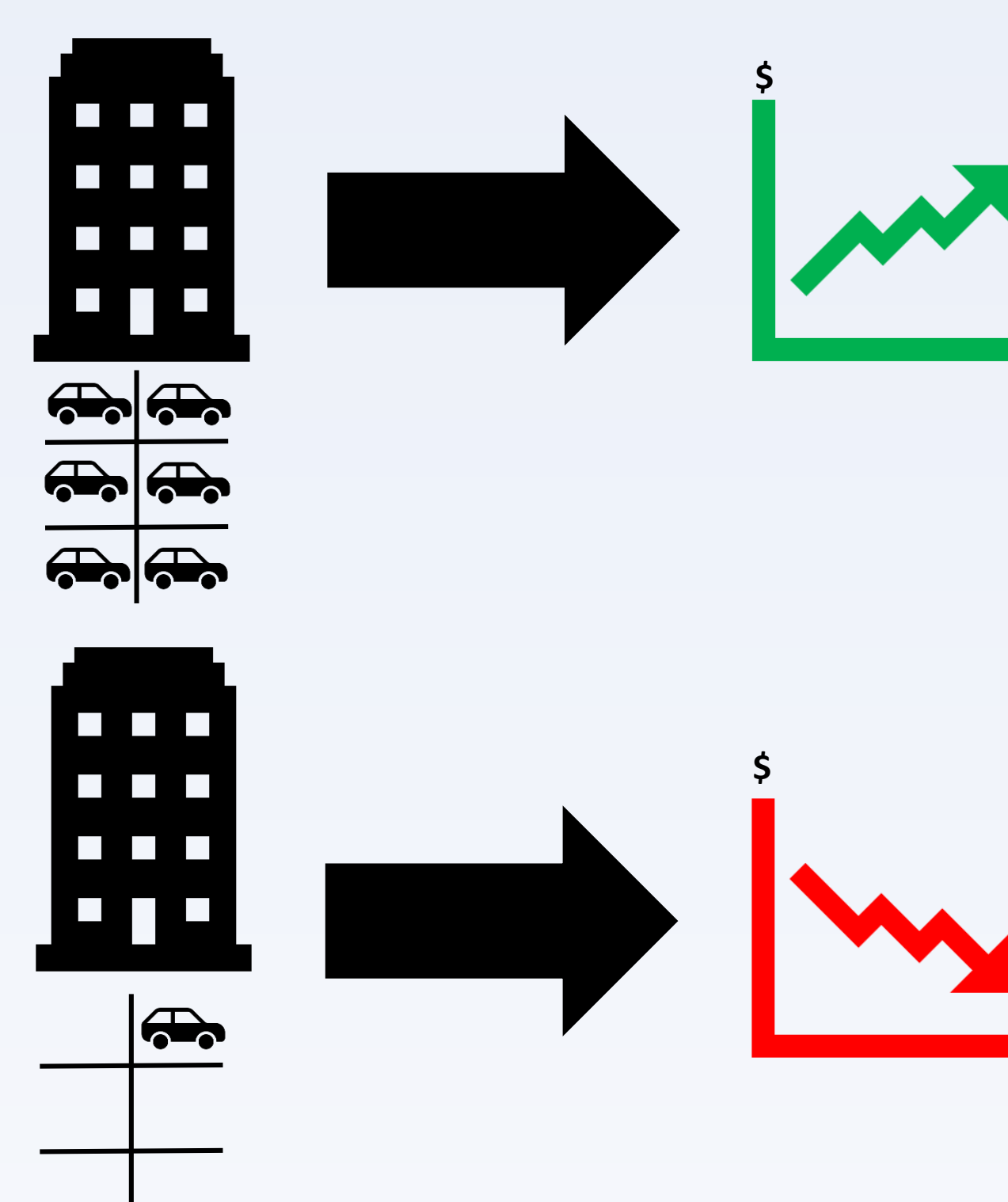
**The increase in information asymmetry between investors due to the availability of alternative data leads to a decrease in the liquidity of affected firms.**

- Bid-ask spreads and amihud illiquidity ratios increase between 3.8% and 20% in the post period.

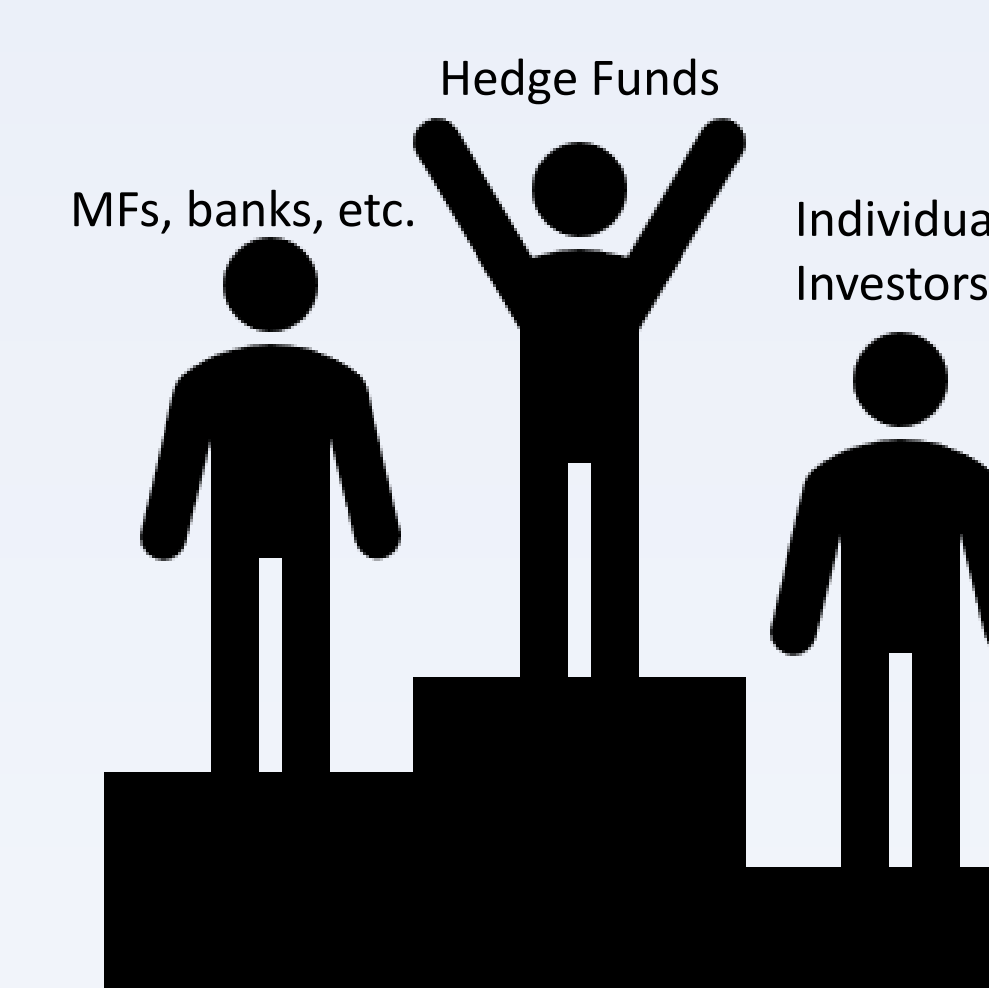


### Conclusion

**A trading strategy based on alternative data earns monthly alphas of 1.6%**



**The availability of alternative data benefits hedge funds and hurts individual investors**



**The increase in information asymmetry leads to a decrease in the liquidity of affected firms**

### Contact Info



Marcus Painter | University of Kentucky  
marcus.painter@uky.edu | 636.485.8340

**UK** Gatton College of Business and Economics  
Department of Finance and Quantitative Methods