

Data Visualization

Course Introduction

Ashwin Malshé

About Me

Academic Experience

- UTSA
 - Since fall 2016 as Assistant Professor of Marketing
 - From August 2022, Associate Professor with tenure
- Mannheim Business School, Germany
 - Visiting professor since spring 2013
- ESSEC Business School, France-Singapore (2011-2016)

Research Areas

- Marketing-finance interface
- Machine learning applications to business strategy
 - Deep learning, Ensembles, Double Machine Learning
- Social media marketing
- Impact of Environment, Social, and Governance factors on financial performance

Teaching

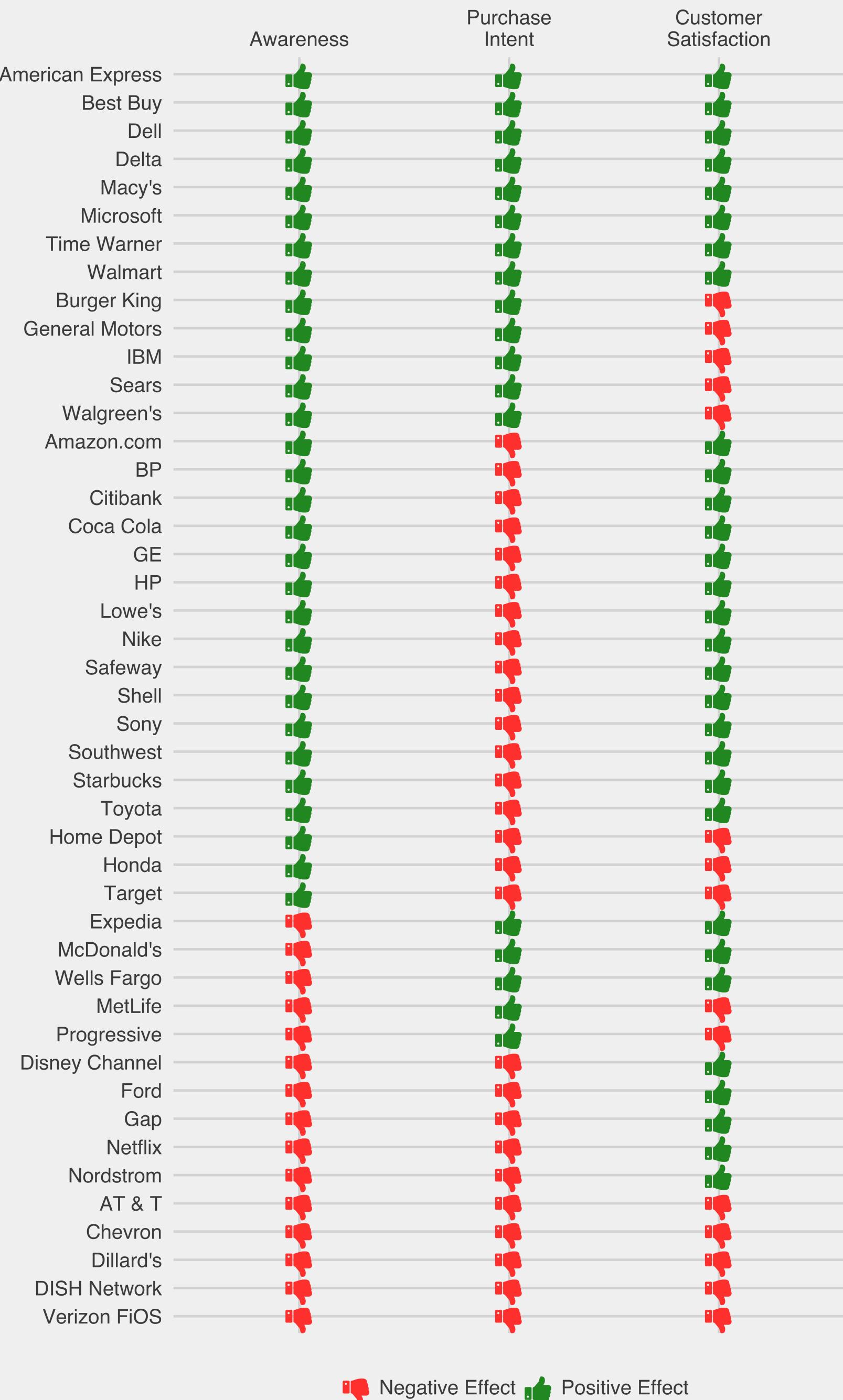
- Data Visualization
- Data Analytics Applications
- Marketing Strategy (PhD seminar)
- Social Media Marketing
- R and Python Programming

Consulting

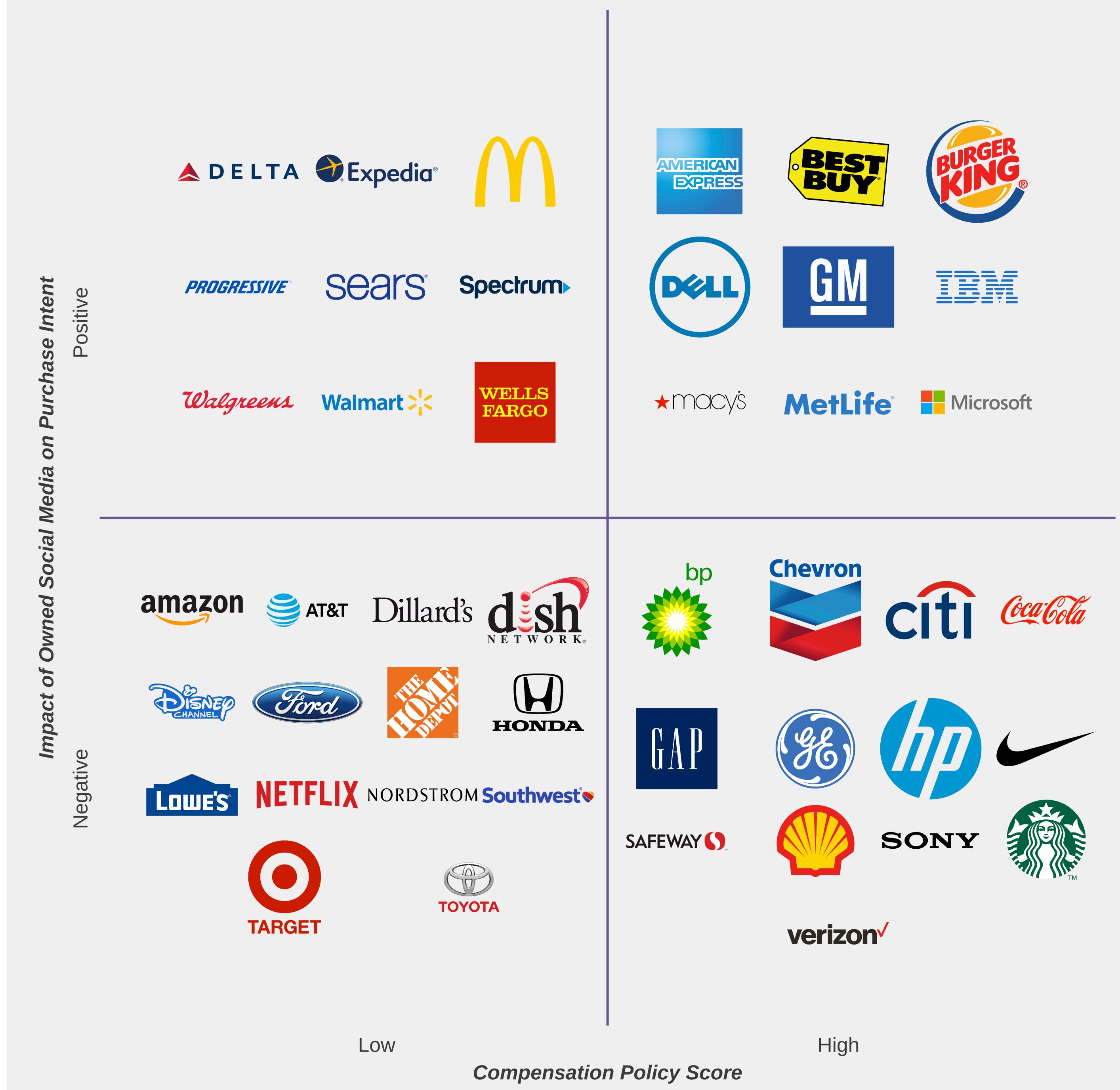
- Berij AI (*pronounced as Beriz AI*)
 - Data science consulting for various business applications
 - Contract bids prediction
 - Sales prediction
 - Text analysis of the company data

A Few DataViz Examples from My Work

Effectiveness of Owned Social Media



Malshe, Pauwels, Colicev 2019



ESG Emphasis Finder

ESG emphasis evolution, competitor benchmarking, and performance prediction

Welcome

ESG Emphasis Evolution

Benchmarking & Prediction

Choose a Sector

Consumer Goods

Choose a year

2006

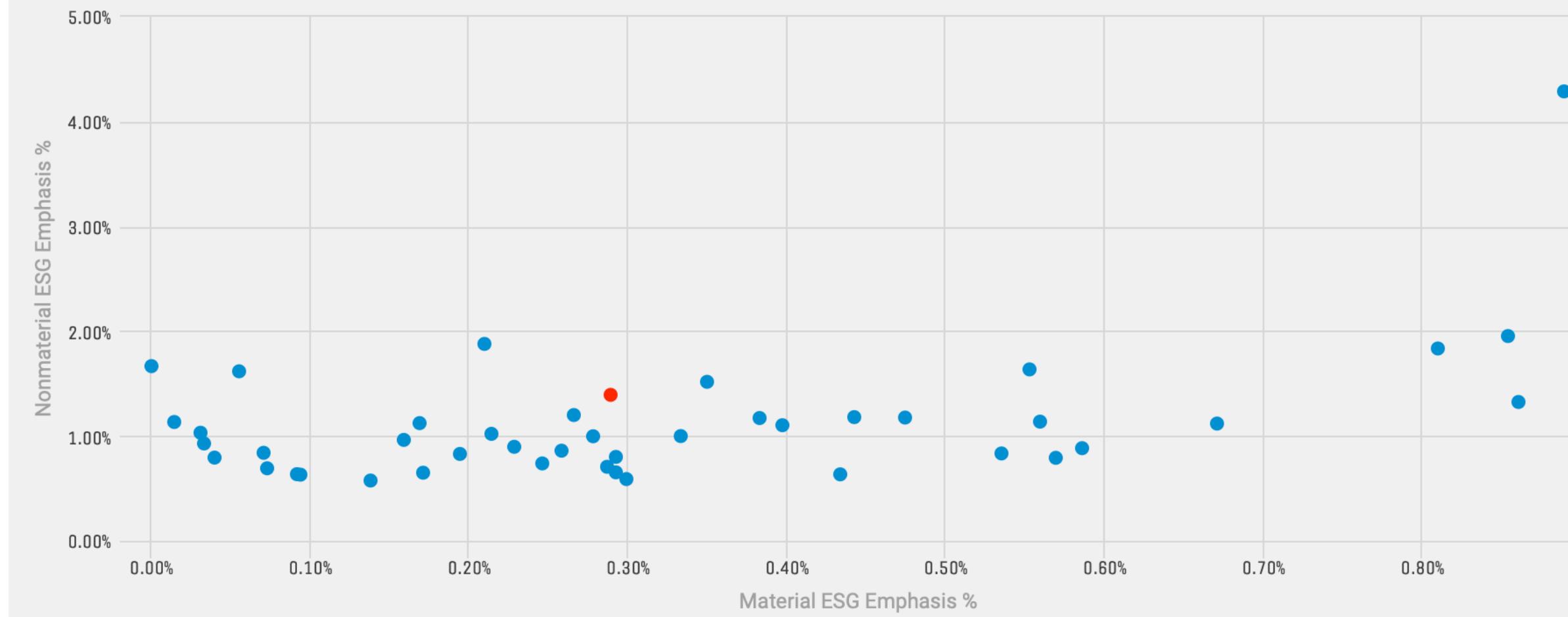
Choose your company

1-800-FLOWERS.COM, Inc.

Examples of nonmaterial and material ESG issues for Consumer Goods

ESG ISSUE	MATERIALITY
GHG Emissions	Nonmaterial
Air Quality	Nonmaterial
Waste & Hazardous Materials Management	Nonmaterial
Ecological Impacts	Nonmaterial
Human Rights & Community Relations	Nonmaterial
Energy Management	Material
Water & Wastewater Management	Material
Customer Privacy	Material
Data Security	Material
Product Quality & Safety	Material

SASB Sector Comparison for 1-800-FLOWERS.COM, Inc.



Drag the red point representing 1-800-FLOWERS.COM, Inc. to a desired location

Current ESG Emphasis and Firm Value

MATERIAL ESG	NONMATERIAL ESG	TOBIN'S Q
0.33%	1.16%	2.34

Revised ESG Emphasis and Firm Value

MATERIAL ESG	NONMATERIAL ESG	TOBIN'S Q
↓ 0.29%	↑ 1.39%	2.19

The web app allows researchers, executives, and investors to perform a "what if" analysis by enabling moving the focal company on the scatterplot to another location. Based on the new location, the web app automatically computes the coordinates of the point and updates the company's non-material and material ESG emphasis scores. Next, using these updated values, the app shows the predicted Tobin's q and the change in Tobin's q compared to its current value. A noteworthy finding is that the Tobin's q is very

<https://esg-analytics.shinyapps.io/ESG-Emphasis-Finder/>

<https://malshe.shinyapps.io/twitter-analysis-b2b/>

 COLLABORATIVE FOR
CUBES
Customer-Based Execution & Strategy

Mediation App Instructions Example About

Acceptable Formats: Excel (.xlsx, .xls), CSV (.csv), SPSS (.sav), Stata (.dta), or SAS (.sas7bdat)

Upload Data:

Browse... No file selected

Select PROCESS Model.

PROCESS Model:

Model 4

If necessary, change the bootstrap parameters.

Random Number Seed:

123456

Number of Bootstrap Samples:

1000

Confidence Level:

0.95

Setup Results Plot

File Name:

PROCESS Model: Model 4

X Variable:

Y variable:

Mediator:

Random Number Generator Seed: 123456

Number of Bootstrap Samples: 1000

Confidence Level: 0.95

<https://malshe.shinyapps.io/Mediate/>

Course Introduction

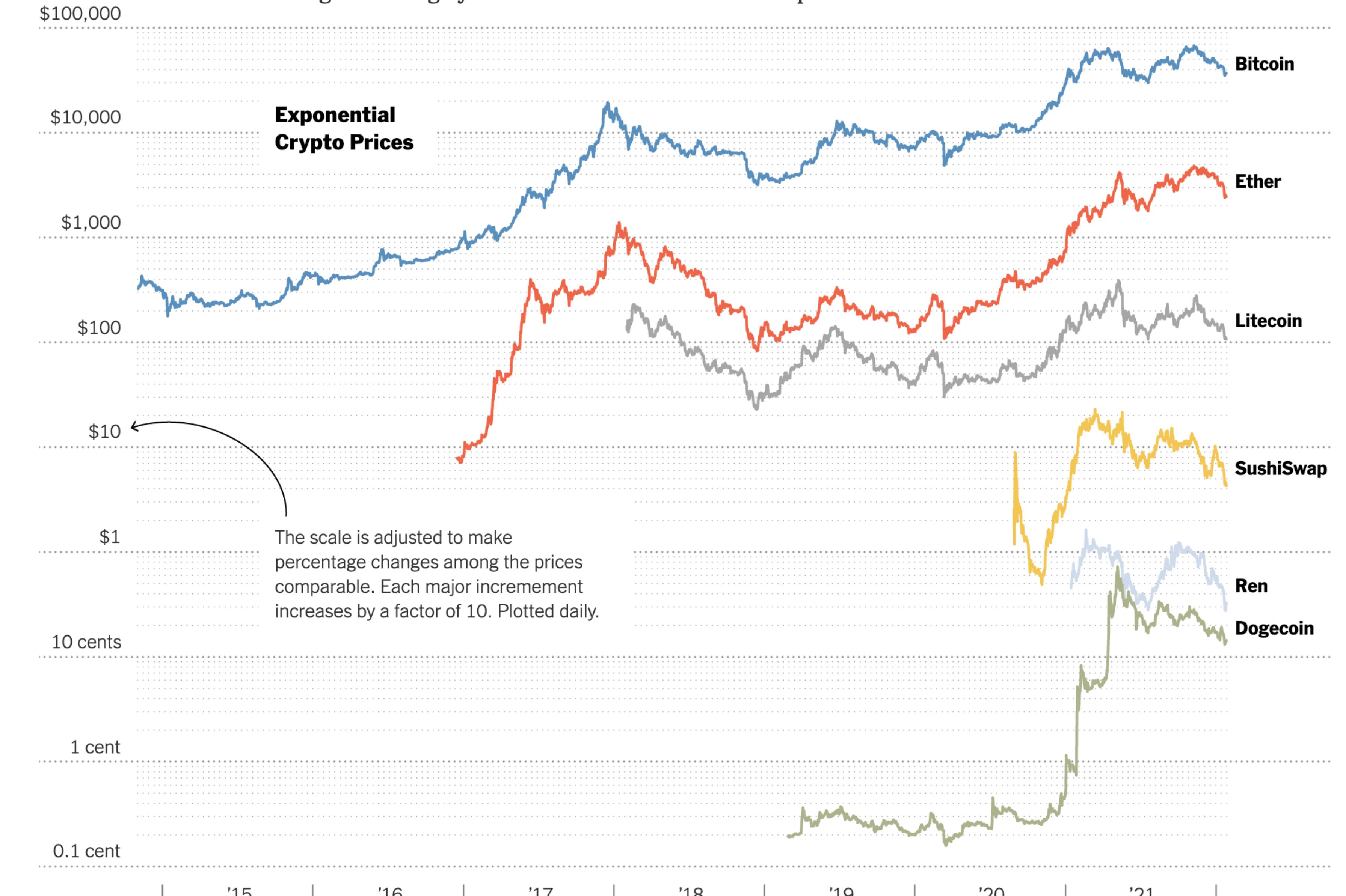
Refer to the syllabus

Schedule

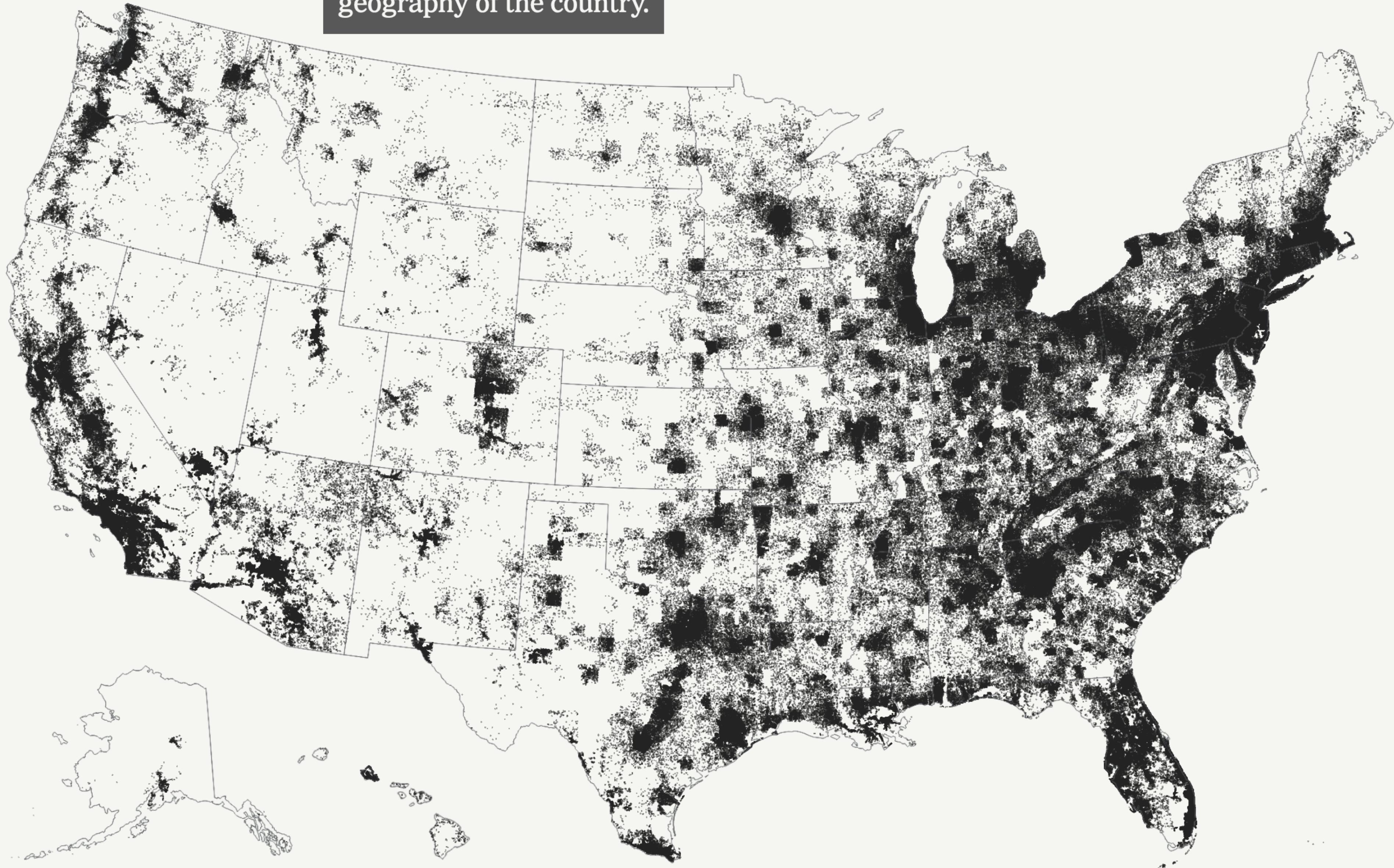
- Week 01, 08/22: Introduction and Basics of R, RStudio, and Github
- Week 02, 08/29: Data wrangling with R
- Week 03, 09/05: Data wrangling with R
- Week 04, 09/12: *What we can easily see and Data storytelling*
- Week 05, 09/19: The grammar of graphics with ggplot2
- Week 06, 09/26: The grammar of graphics with ggplot2
- Week 07, 10/03: The grammar of graphics with ggplot2
- Week 08, 10/10: Final project topics discussion
- Week 09, 10/17: Introduction to interactive visualizations
- Week 10, 10/24: Introduction to interactive visualizations
- Week 11, 10/31: Tableau
- Week 12, 11/07: Tableau
- Week 13, 11/14: Tableau
- Week 14, 11/21: Tableau
- Week 15, 11/28: Final presentations

Data Visualization Examples

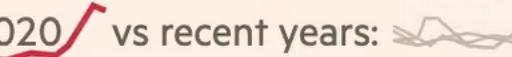
The price of many cryptocurrencies can be extremely volatile, rising and falling by hundreds or even thousands of a percent.

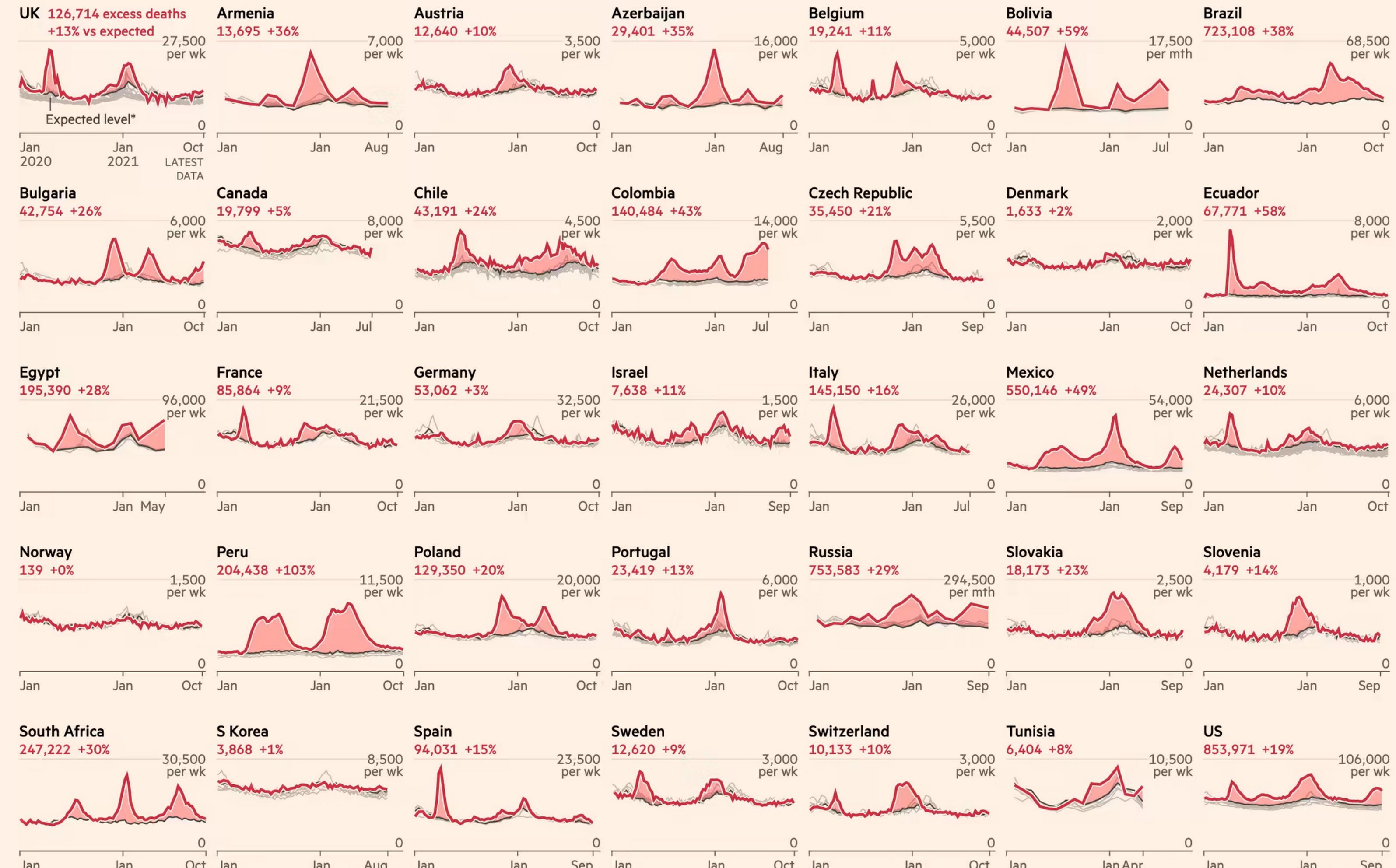


What began as a crisis in cities spread to rural areas and back again, until the path of the virus traced the full geography of the country.



Death rates have climbed far above historical averages in many countries that have faced Covid-19 outbreaks

Number of deaths per week from all causes, 2020 vs recent years:  Shading indicates total excess deaths since 100 confirmed cases in the country



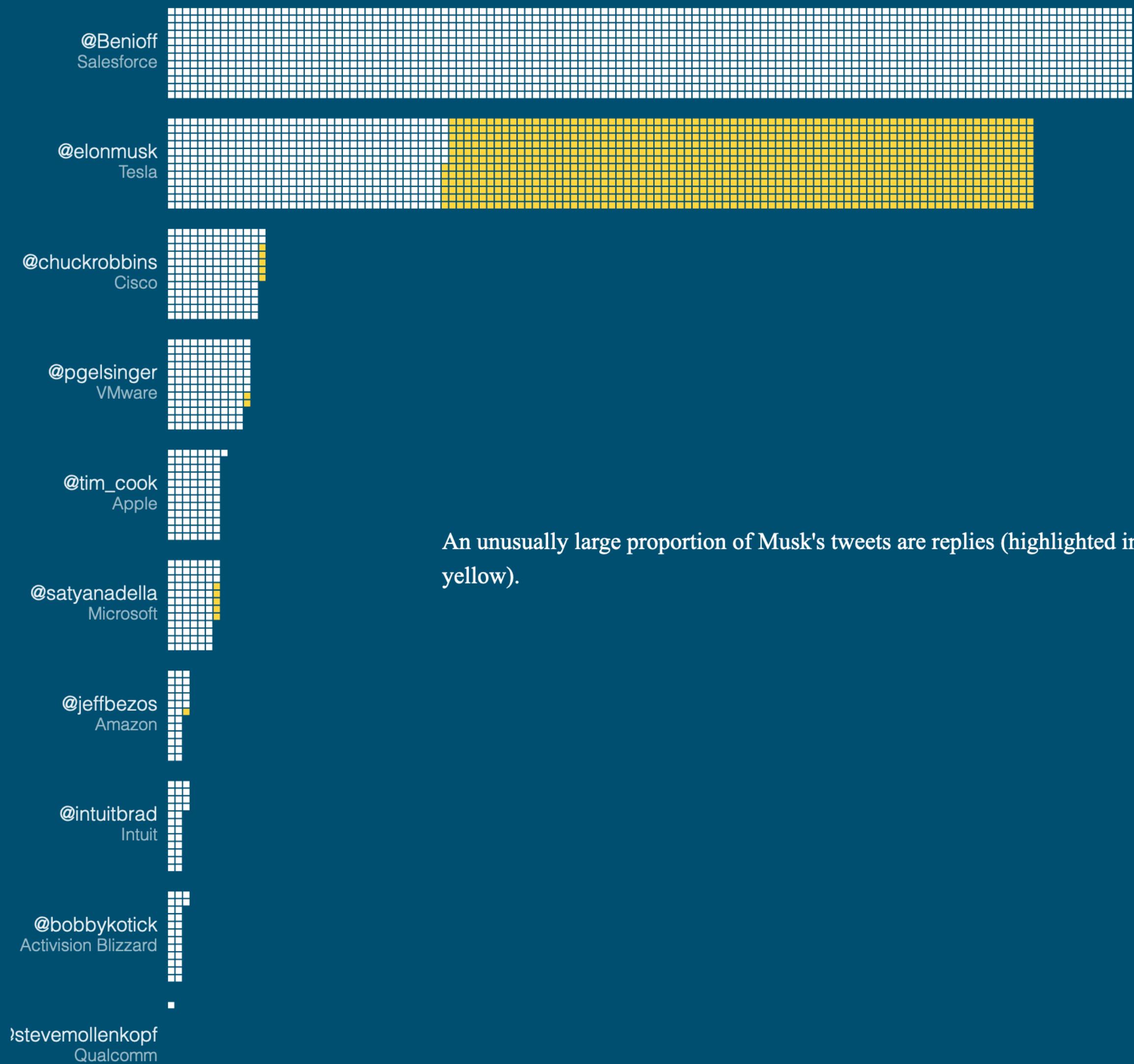
*Adjusted for trend over recent years

Sources: FT analysis of national mortality data and Karlinsky & Kobak's World Mortality Dataset. Data updated November 2

FT graphic: John Burn-Murdoch / @jburnmurdoch

© FT

TWEETS IN 2018



MUSK'S REPLIES TO ACCOUNTS WITH...

