IMAP Specialist series: Investing in Disruption

Session 2 : AI and Machine Learning in Portfolio Management

Dr James Yang, Coolabah Capital Investments
Dr David Allen, Plato Investment Management

Moderated by Rob da Silva, SQM Research

IMAP
Institute of Managed Account Professionals

IMAP 2022 Events

Portfolio Management Conference

10th March – Perth

15th March – Sydney

22nd March – Melbourne

FPA Congress – Managed Account Central

7th/8th April – Sydney

Independent Thought Conference

12th April – Sydney

Adviser Roadshow

14th June – Melbourne

16th June – Sydney

21st June – Brisbane

How to ask a Question

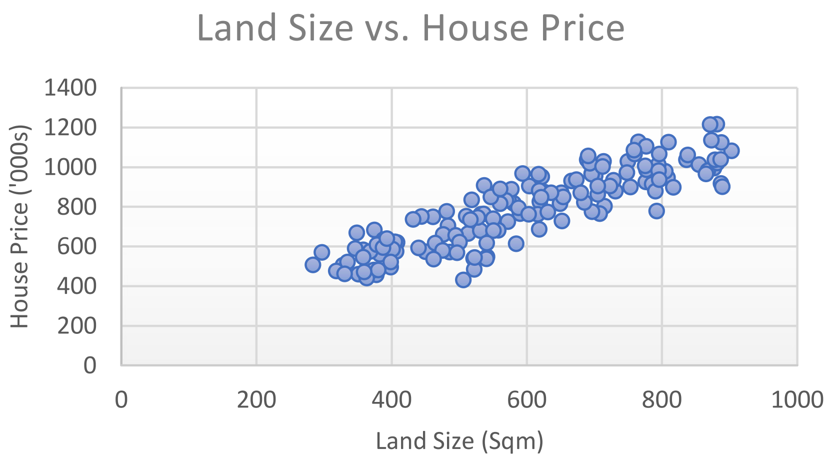
IMAP
Institute of Managed Account Professionals

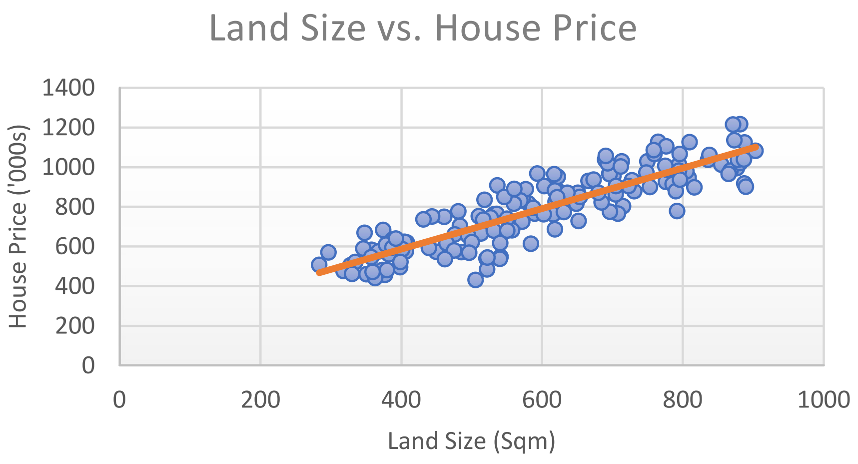
Using Artificial Intelligence and Machine Learning in Portfolio Management

James Yang – Coolabah Capital

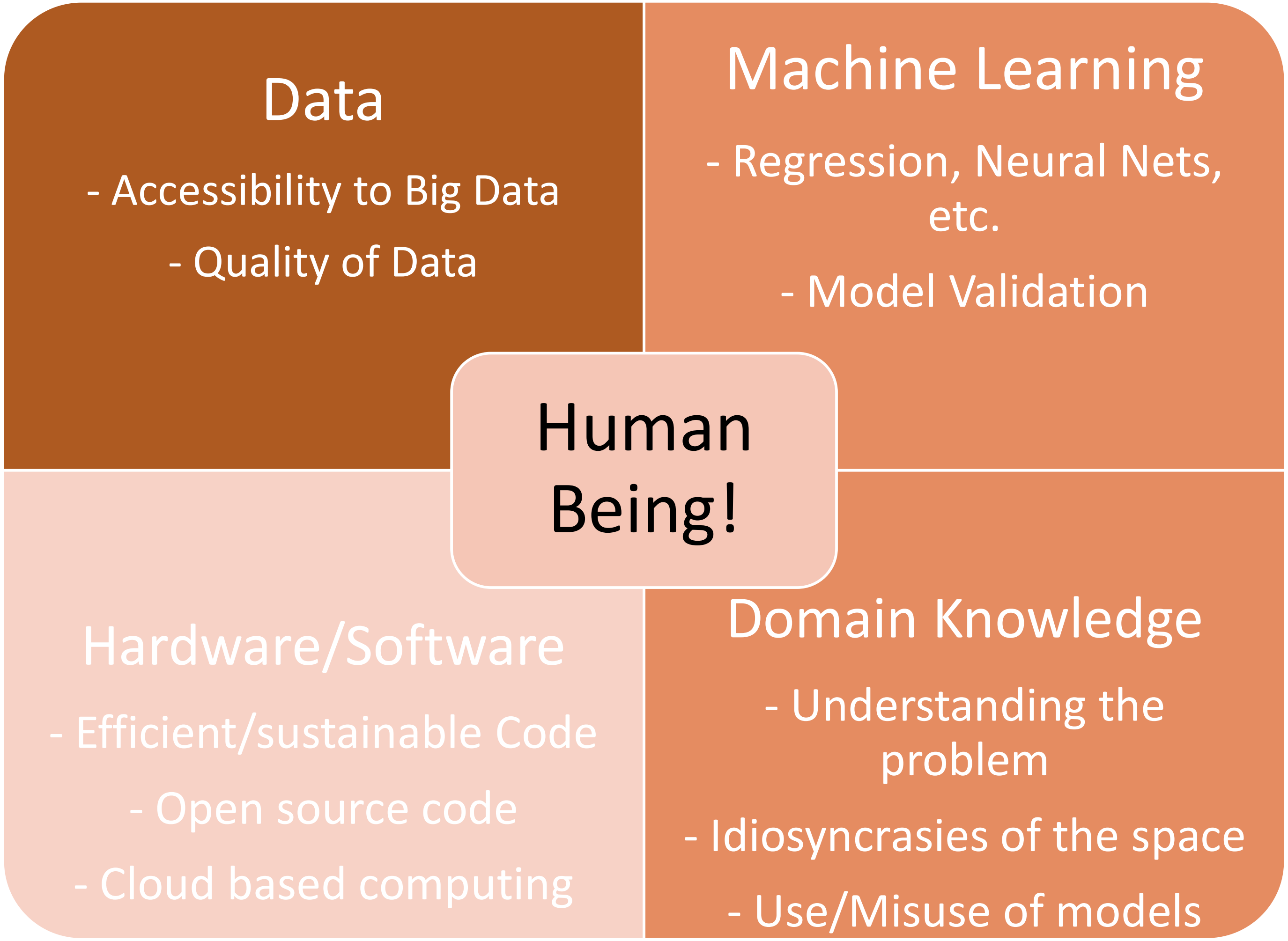
What is Artificial Intelligence (AI)?

- AI is a software tool that optimises an objective
- Often this is translated to obtaining the best prediction possible
- AI can range from simple tools to highly complex systems
- E.g. google maps, search engine, image recognition, self-driving car
- There has been a big shift lately in AI due to the abundance of data





AI Ingredients



Where is AI in Fixed Income?

Electronic platforms enable AI-based algorithmic/quant trading

Australia:

- Nearly all OTC credit is not traded electronically
- Price and volume data is very opaque and monopolized by Austraclear.
- Exception is ASX-listed hybrid debt

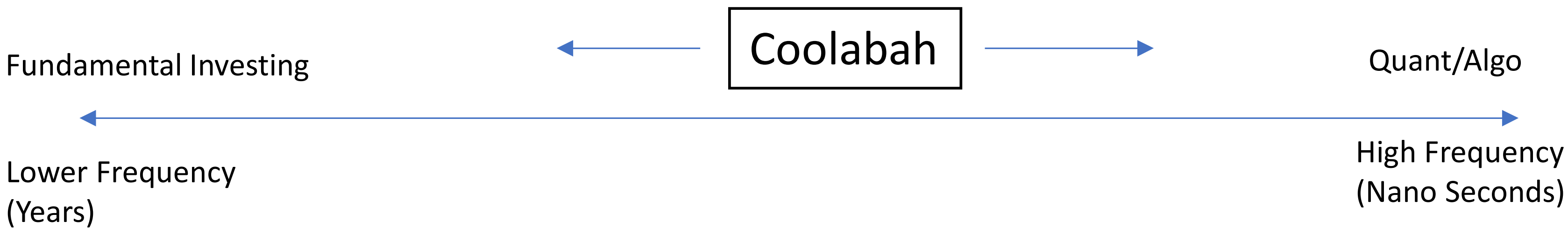
Europe/USA:

- Timely and transparent price and volume data from clearing houses.
- In Europe more than 50% of flow is through electronic platforms

Looking forward in Aus: There has been a shift to electronic platforms such as Yieldbroker, MarketAxess and Tradeweb. Data is still an issue!

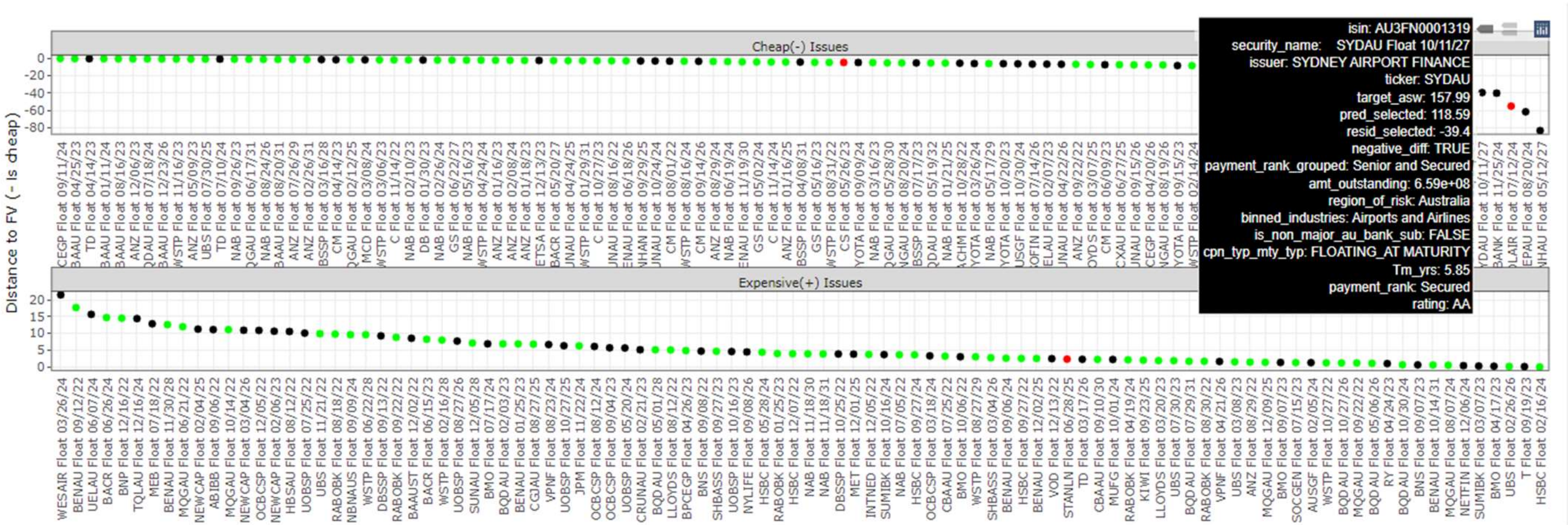
How does AI fit into Coolabah?

- Investment Team:
  - Portfolio management team: 6 portfolio managers/traders
  - Data science team: 5 data scientists
  - Credit research team: 7 credit analysts
- Benefits of having an in-house data science team:
  - Proprietary models
  - Speed and agility
  - Models adapted to our views



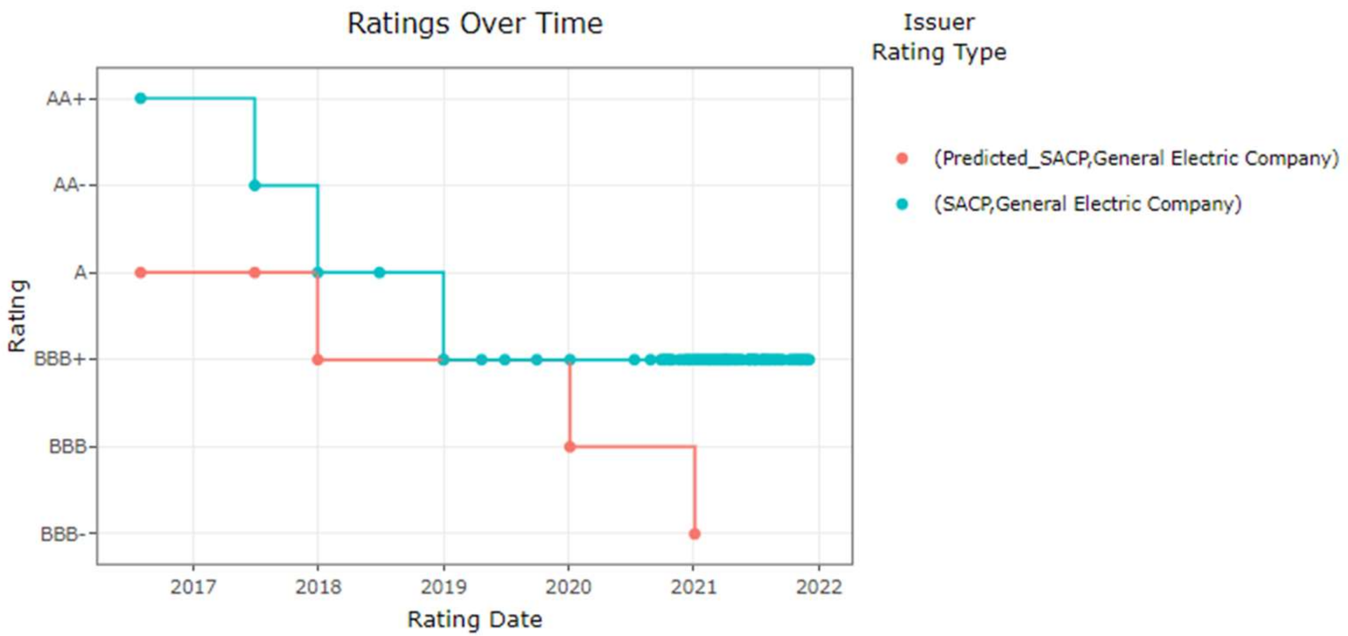
Example1: Our bread and butter

- Goal: Identify cheap and expensive bonds to extract alpha
- The data science team maintains over 30 quantitative models
- The credit research team overlay their assessment of the credit quality of the company
- The portfolio management team guide the decision making and execution



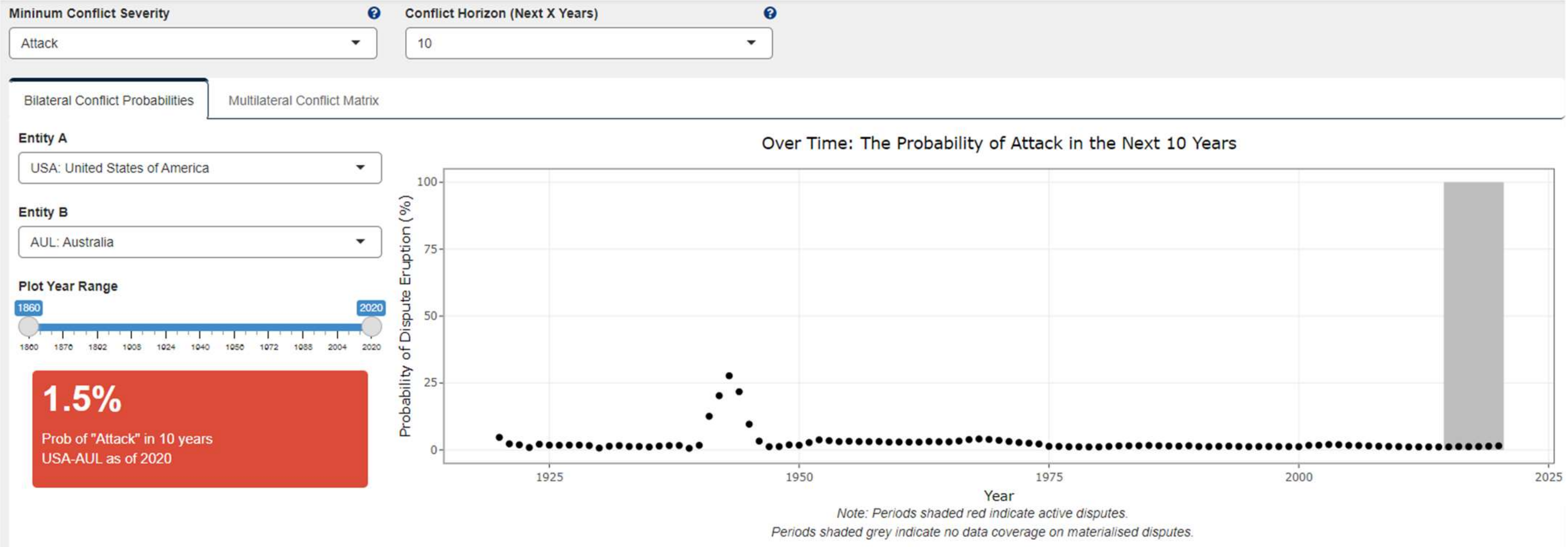
Example 2: CreditAI Model

- Goal: Predict the S&P ‘Stand-Alone Credit Profile’ of a company using the company financial data.
- Collaboration between Credit Research and Data Science teams.
- The predicted rating is a component of our pricing models.
- The model is often a catalyst for the credit research team to investigate a company further.



Example 3: Predicting War

- Goal: To create an accurate, parsimonious and robust model to forecast the probability of conflict and war.
- URL: predictingwar.com



IMAP, DECEMBER, 2021

DR. DAVID ALLEN, HEAD OF LONG-SHORT STRATEGIES

Plato

INVESTMENT MANAGEMENT

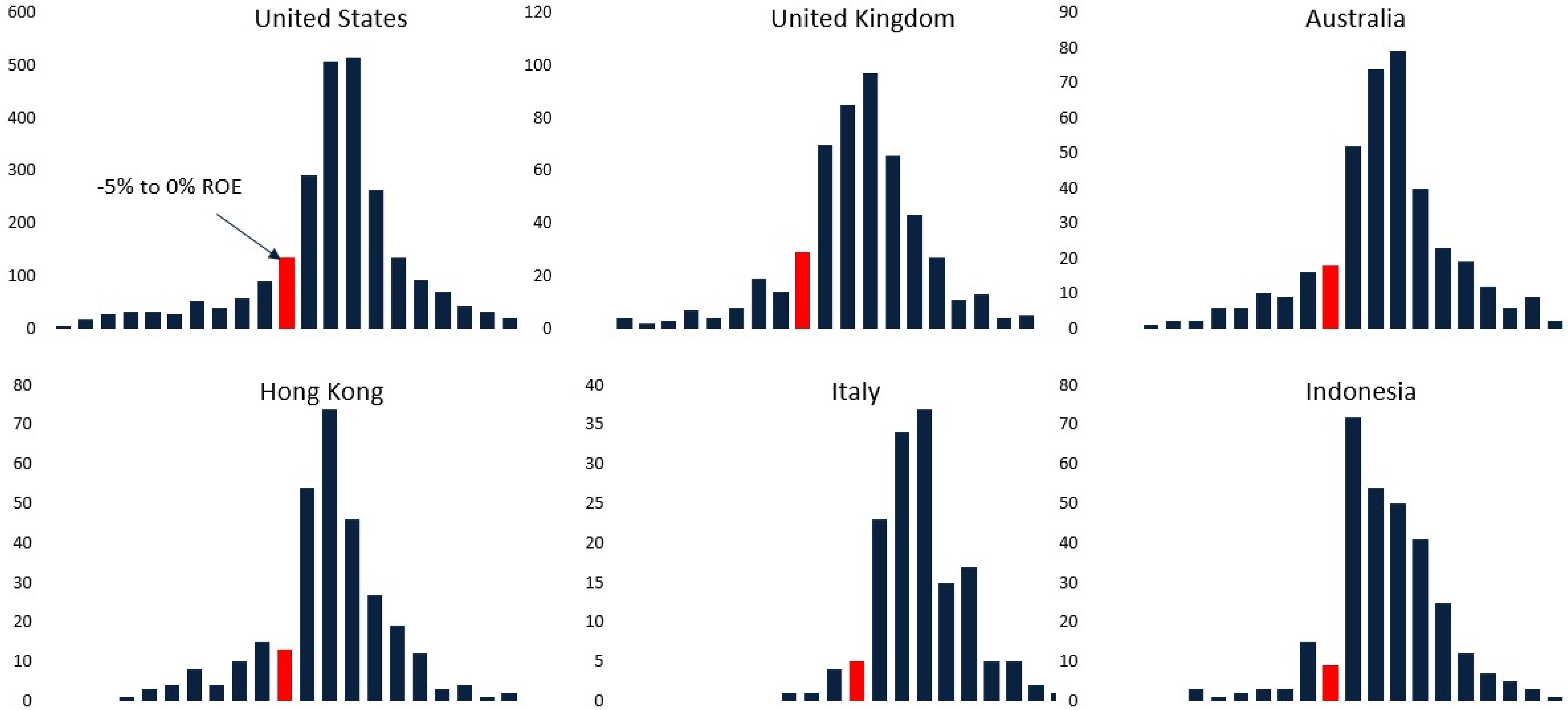
The Challenge of the Information Age

	Pre 1990	1990s -2000s	Today
Trade latency	Minutes	Seconds	Milliseconds
Number of U.S. corporate filings per day	<500	<2500	>5000
Number of financial indices	<1000	<10,000	> 3 million
% of volume executed by algorithms	0	<5%	>85%
Commercial databases	Machine readable, small	Machine readable, large	Unstructured, massive

"More data has been created in the last two years than in the entire course of human history" - *IBM Marketing Cloud*

Can you trust accounting numbers?

ACCOUNTING MANIPULATION: RETURN ON EQUITY (ROE) %

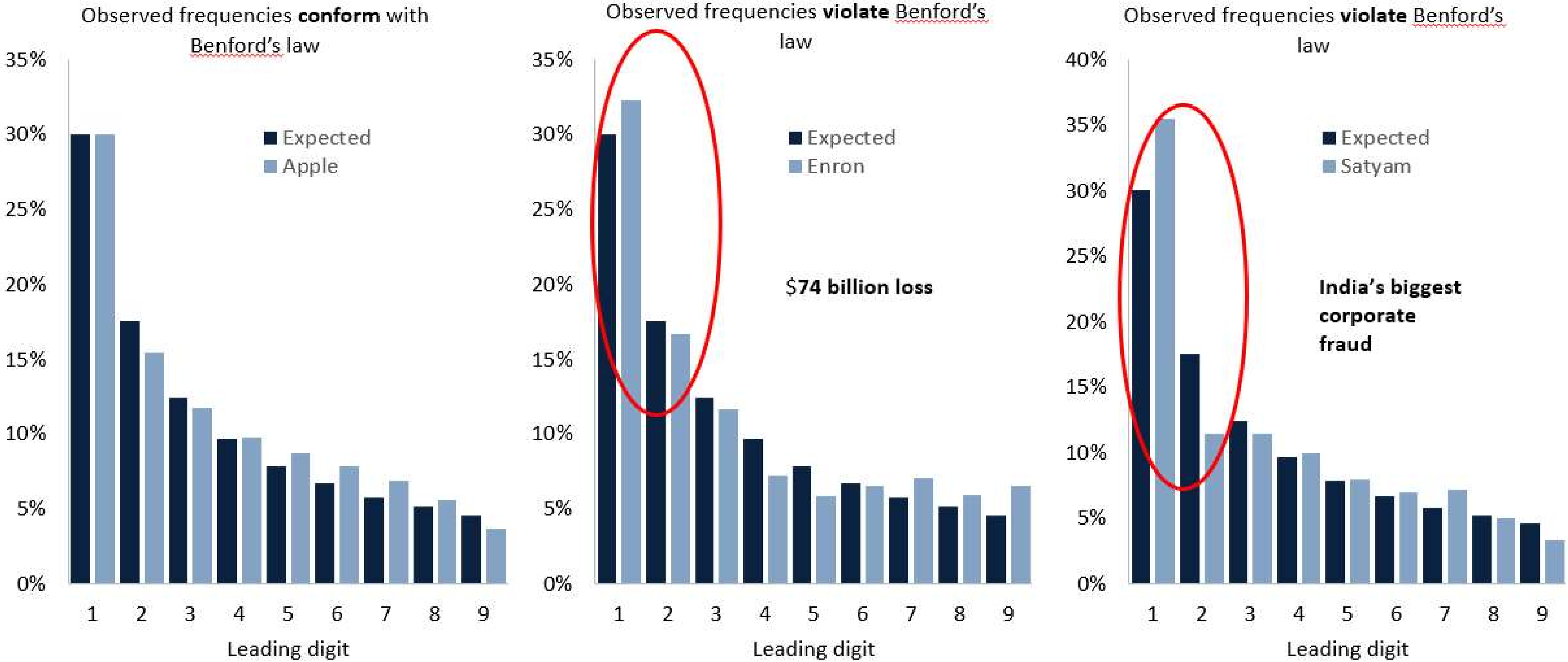


Source: Plato Investment Management. MSCI World All Cap universe, 9/2020

"Manipulation is rife, particularly in emerging markets"

The Good, the Bad, and the Ugly

FORENSIC ACCOUNTING METHODS



Source: Plato Investment Management. MSCI World All Cap universe, 9/2020

"Plato can detect hidden governance issues"

Gauging sentiment

NATURAL LANGUAGE PROCESSING AND EARNINGS CALLS

1. **NATURAL LANGUAGE PROCESSING APPLIED TO EARNINGS CALL TRANSCRIPTS**
2. **TONE MEASURED USING GOOGLE'S WORD EMBEDDING ALGORITHM: WORD2VEC**
3. **CALLS SPLIT INTO MANAGEMENT DISCUSSION AND Q&A**

Company Name: Tesla Inc
Company Ticker: TSLA US Equity
Date: 2018-05-02

Q - Galileo Russell (BIO 20727770 <GO>)

And specifically on the timing, though. Do you have any details about or when we could even expect to learn more about the timing of this service?

A - Elon Reeve Musk (BIO 1954518 <GO>)

Well, the hardest thing to break about the timing is regulatory approval. The thing that's tricky with autonomous vehicles is that autonomy doesn't reduce the accident rate or fatality rate to zero. It improves it substantially, but the reality is that even though we think our – we think autonomy, even car autonomy reduces the probability of a death by 30%, which would be [illegible] because there's like – broadly there's over a 1 million, I think 1.2 million automotive deaths per year. And how many do you read about? Basically, none of them. However but, if it's an autonomous situation, it's headline news, and the media fails to mention that - actually they shouldn't really be writing the story, they should be writing the story about how autonomous cars are really safe, but that's not the story that people want to click on. So they write inflammatory headlines that are fundamentally misleading to the readers. It's really outrageous. And this will be true, even if electric cars were sorry, if autonomous cars were 10 times safer, so if instead of a 1 million deaths you had 100,000 deaths. There is still going to be people who will still sue and say, hey, you're responsible for the death here. And it's like, well, the 90% of people who didn't die are not suing. They're still alive, they just don't know it. So, we've got to deal with that and then obviously regulators respond to public pressure and the press. So, if the press is hounding the regulators, and the public is laboring on misapprehension that autonomy is less safe because of misleading press, then this is where I find the challenge of predicting it to be very difficult. And, yeah, it's really incredibly irresponsible of any journalists with integrity to write an article that would lead people to believe that autonomy is less safe. Because people might actually turn it off, and then die. So anyway, I'm really upset by this.

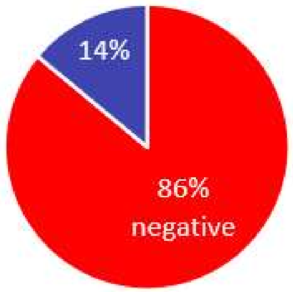
Q - Galileo Russell (BIO 20727770 <GO>)

[illegible]. [illegible] stuff. So, I'm also wondering, are you guys going to let Porsche beat you to market with a 350 kilowatt-hour Supercharger? Because I know you've mentioned V3...

A - Elon Reeve Musk (BIO 1954518 <GO>)

We'll keep going if you (46:57) ask questions that are not boring. Sorry, go ahead. Yeah, that's cool. This is way more interesting.

"Excuse me. Next. Boring bonehead questions are not cool. Next?"
E. Musk, Q1 '18 call



Source: Bloomberg

"~25,000 earnings calls analysed each year"

Plato

IMAP Specialist series: Investing in Disruption

Session 3 : What role will the disrupters and disruptive technology play in Portfolio Management?

Cameron Gleeson, BetaShares

David Wanis, Longwave Capital

Dr Jerome Lander, WealthLander

Moderated by Rob da Silva, SQM Research