

The Accelerating Evolution Underway in the Reach and Efficiency of Quantamental Investing



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Thank you



- Selection committee
- Conference organizers
- Attendees

Outline

- Quantamental investing up to now
- Current examples of quantifying qualitative insights
 - More factors from more sources
 - Highly granular, systematic ESG
 - Potential for forward looking actual, fundamental risk models
 - Now-casting
 - Dynamic weighting of factors
- The future of quantamental investing

Quantamental investing up to now



“Qual”

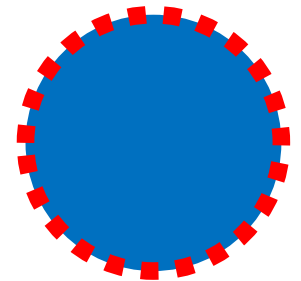
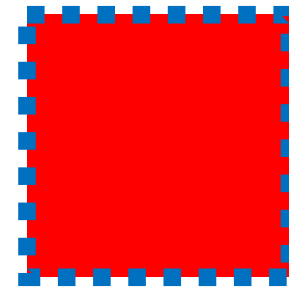
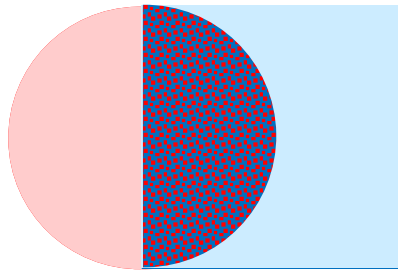
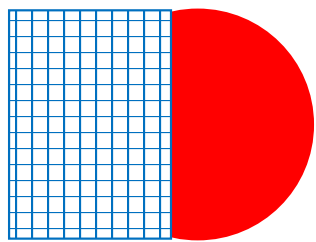


“Quant”



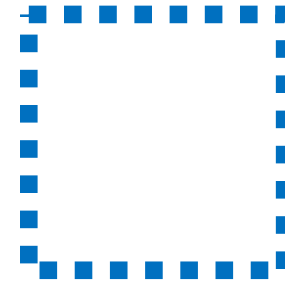
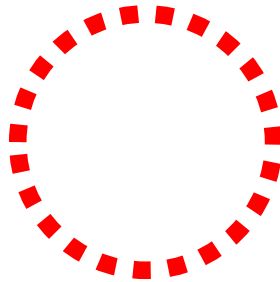
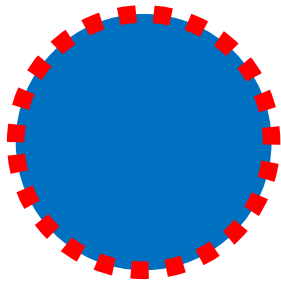
“Quanta-
franken-
mental”

Quanta-franken-mental



Smart beta

Traditional quant factors and models have been commoditized



The quantamental dream lives on

Smart beta is gaining assets and pressuring fees, *but*

- x *limited factor set, prone to side bets and style drift*
- x *different market drivers at different times*
 - *long dry spells, long “aberrations” → diversify or actively time*

Modeling what and how Quants think about investing,
with Quants’ systematic and efficient benefits,
is getting very close

- ✓ broader, deeper factor set: thematic, corporate events, ESG, etc.
- ✓ forward-looking *actual risk* models
- ✓ effective factor timing
- ✓ dotCOM/dotBOMB, GFC, Enron, Tōhoku earthquake and tsunami

BD+ML applied to earnings is the tip of the iceberg

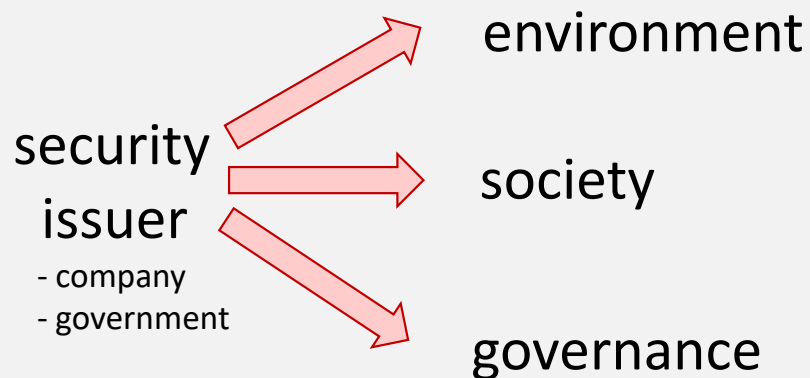
Traditional Insight

proprietary
forecasts
of sales & earnings

- factory visits
- customer and
supplier
observation
- macro
assumptions

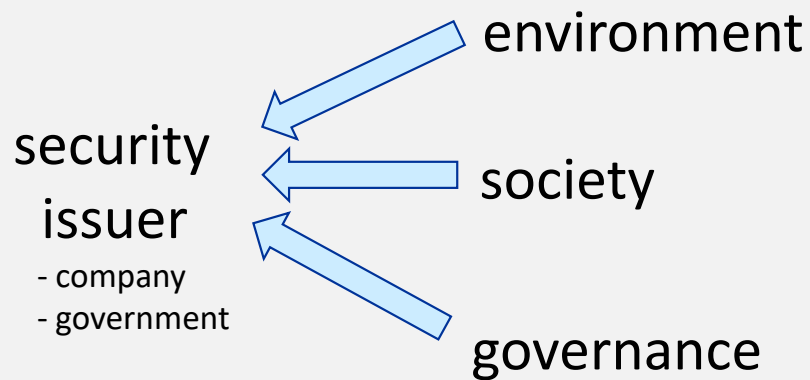


Integrated ESG is gaining traction and modernizing



- Used to be all human scoring
 - primarily based on ***what companies preach***
 - no industry-wide standards for criteria, their measurement, or their aggregation
- Now being systematized and automated
 - based on ***what companies actually do***
 - news analysis (e.g., TruValue Labs)
 - litigation analysis
 - employer reviews
 - product reviews
 - Benford's Law [Enron]

ESG is a one-way perspective on a two-way street



- Now systematized and quantified
 - supply chain & catastrophe
 - conflict
 - regulatory risk / political thematic
 - controversy, liability / casualty, reputation
- InsurTech has blazed this trail
 - Verisk, Maplecroft, Resilinc, et al

Tōhoku earthquake and tsunami, 2011

Imagine the informational advantages for an investor with a quantamental model integrating today's supply chain network data and GDELT

- insurers
 - construction
 - building materials
 - ports & airports
 - utilities
 - oil
 - TOPIX
 - Yen
 - auto makers
 - semiconductor users
 - aircraft makers
- killed 16,000+, injured 6,000+, missing 3,000+
 - destroyed 138,000 buildings
 - appx \$360 billion in economic damage
 - sample of impacted companies: Toyota, Nissan, Honda, Mitsubishi, Suzuki, Sony, Apple, Boeing
 - crippled Japan's nuclear industry, which supplied 1/3 of Japan's electricity: 11/50 reactors were immediately closed, thereby reducing electricity generation by 40%; public outcry → +22 more shut down by May 2011; by May 2012, there were none in operation.
 - no nuclear power → oil imports → record trade deficits → debt spike



Sources: "Breach in Reactor," Associated Press, March 25, 2011.
"Considerable Economic Impact from Japan's Quake," ABC News, March 12, 2011.
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BD+ML can enhance investment risk models

- Current
- Non
- Long
- How
- What

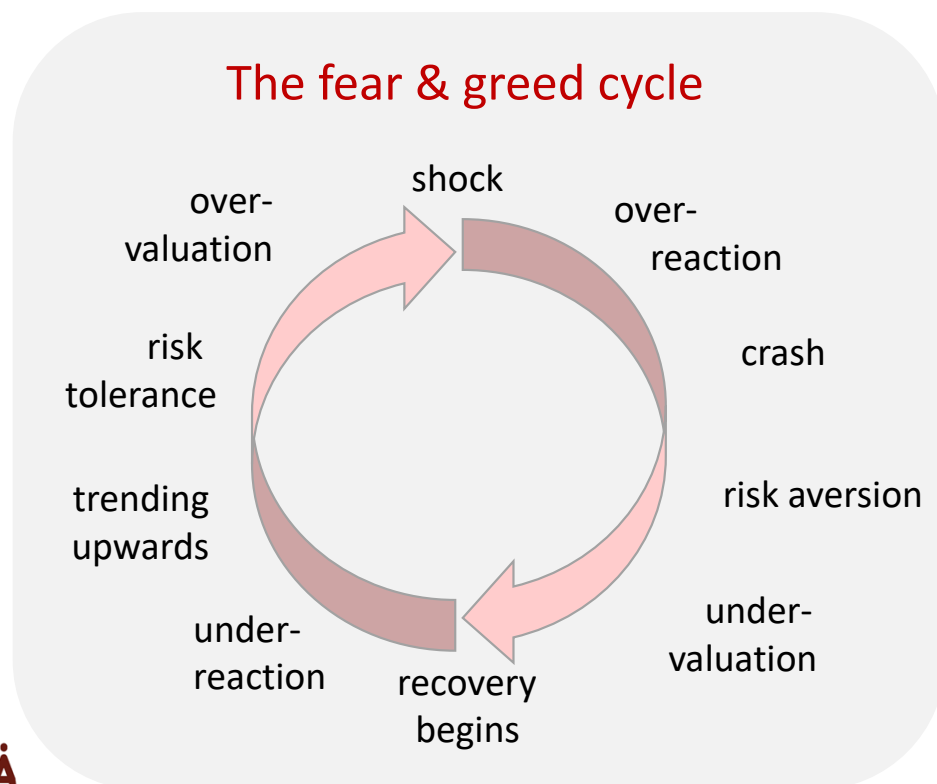


looking variance and
low metrics
disclosures via NLP
G risks?
matic, earnings, etc



- past returns of individual assets and/or characteristics of those assets, such as industry, valuation, financial leverage, duration, etc.
- image source: Petar Milošević [CC BY-SA 4.0] (<https://creativecommons.org/licenses/by-sa/4.0/>) from https://upload.wikimedia.org/wikipedia/commons/d/d3/Wing_mirror.jpg

Understanding *why* can help us model *when*



- Qualitative understanding of *why* factors work can provide insight as to *when*
- A seasoned portfolio manager extrapolates from past experience: “these conditions remind me of when...”
- **Collaborative filtering** using ‘macro distance’ similarly identifies the most relevant past precedents.
- This is a simple form of machine learning that can make **dynamic factor return forecasts**.

Macro indicator 'now casting'

- Employment: job listings including who, what, where
- Financial Flows: SWIFT indexes
- Inflation: billion prices project scrapes 15M prices daily in 60 countries
- Production: satellite measurement of night sky brightness + GIS factory locations, St. Louis Fed Economic News Index: Real GDP Nowcast, ...
- Regulatory/ political: NLP uncovers prevailing themes and sectors/countries involved: economic policy uncertainty (24 countries); political, geopolitical risk indexes; immigration anxiety, ...
- Shipments(IoT): ship and truck movements, cargo (un)loading, ...



Now-casting on steroids

GDELT is a realtime global perspective on what's happening “every second of every day” and how the world feels about it.

- world-wide broadcast, print, web breaking news
- realtime streaming translation of 65 languages that account for 98.4% of non-English material
- accurately tagged with people, organizations, themes and emotions*, events, locations, source, timestamp, counts, quotes, images
- processed faster than an army of analysts could ever do in real-time
- **updates every 15 minutes, 100% free and open**

*Google
does all the
heavy lifting!*

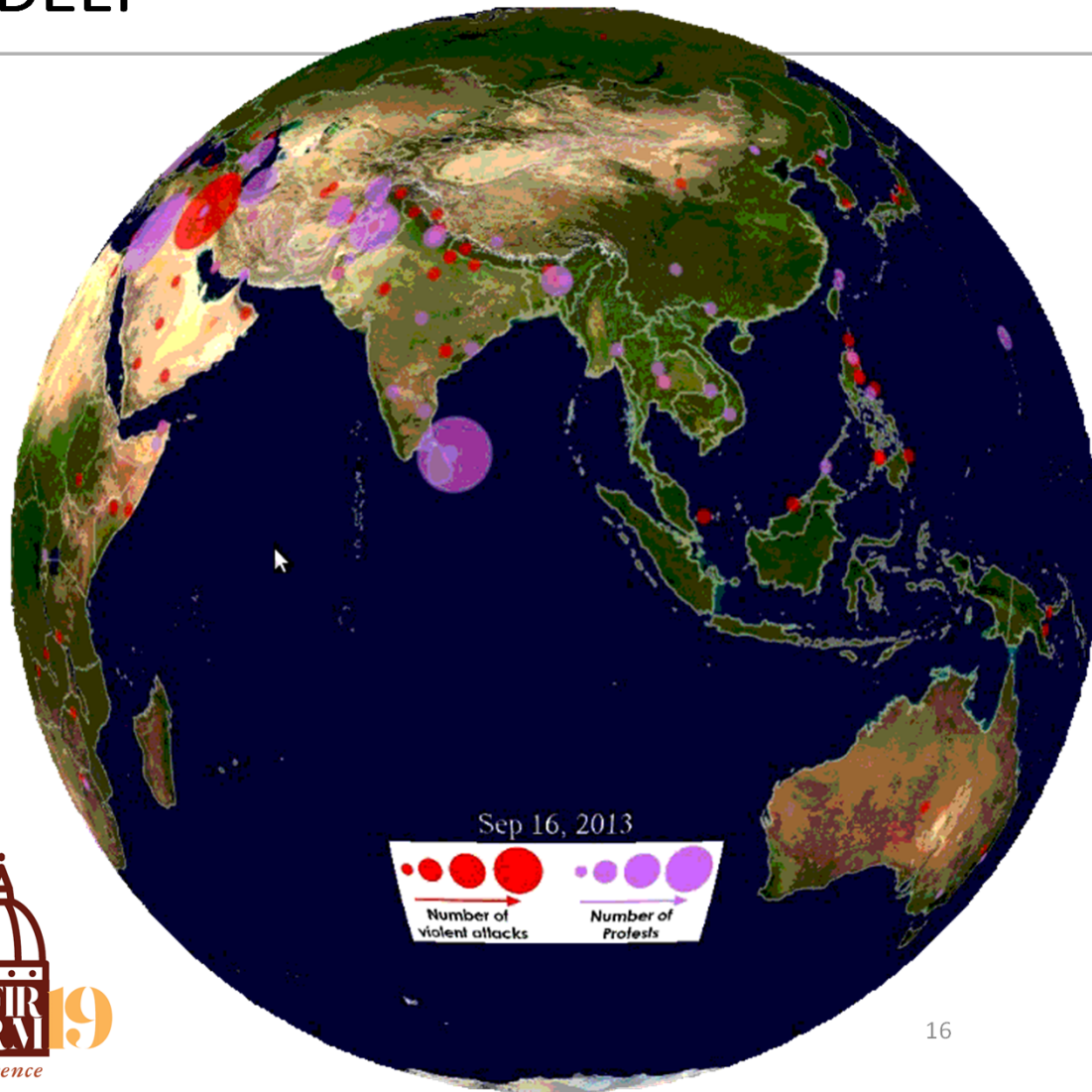


*24 emotional measurement packages that together assess more than 2,300 emotions and themes, including native measures for 15 languages

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GDELT



Filter for

- news and sentiment about your holdings (earnings, governance, litigation, etc)
- catastrophe or instability impacting your holdings directly or indirectly
- thematic investing exposures
- real time macro indicators important to your investment outlook

The future of Quantamental Investing

The **key pieces** to the vision of systematizing the full range of qualitative insights already **exist**, as prototypes and/or discrete products

- Far broader set of factors, both micro and macro
- Extracted from diverse sources and formats
- Near real-time updating
- Adaptability to new information, and to changing conditions

Main challenges: paying for and integrating all the pieces that already exist

Selected references

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