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BEHAVIOURAL ECONOMICS AND SUPERFORECASTING – A NEW ANGLE IN AM

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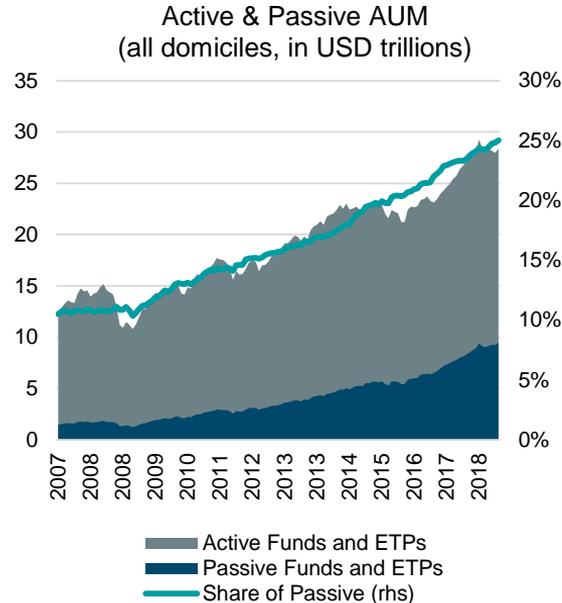**Global Head of Multi Asset & Solutions**

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J.P. Morgan Macro Quantitative & Derivatives Conference 2018

THE INDUSTRY GOES „EXTREME"
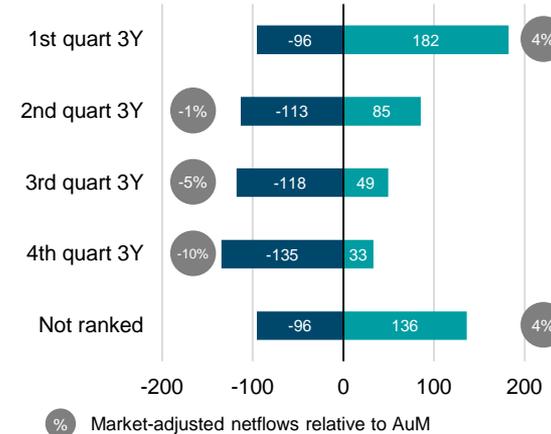
It's pretty challenging… and will get even more

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ACTIVE VS. PASSIVE

Active & Passive AUM
(all domiciles, in USD trillions)

Active Funds and ETPs
Passive Funds and ETPs
Share of Passive (rhs)

THE WINNER TAKES IT ALL

Market-adjusted netflows by rel. performance
in EUR bn, 2018 YTD, active funds only, EMEA Retail

1st quart 3Y	-96	182	4%
2nd quart 3Y	-1%	-113	85
3rd quart 3Y	-5%	-118	49
4th quart 3Y	-10%	-135	33
Not ranked	-96	136	4%

% Market-adjusted netflows relative to AuM

Inflows concentrate in top performing products and unrated products (incl. innovations)

SUCCESS NEEDS FREEDOM*

Annualized Outperformance vs. LUP
(by decile), January 2003 – December 2017

Source: Morningstar Research Database, authors' calculations
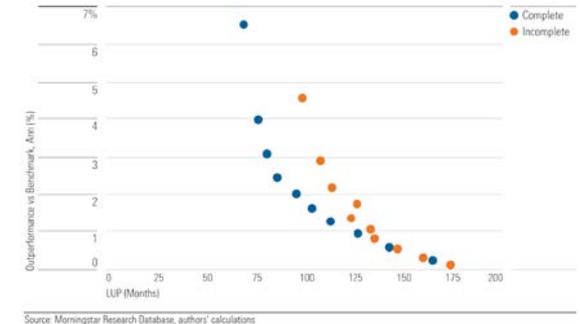
Even the best funds over 15-year period underperformed their benchmark for almost 6 consecutive years on average (Longest Underperforming Period)

WHAT SEPARATES LEADERS FROM LAGGARDS

Cut the noise and focus to become best-in-class

Essential components of any successful strategy

Themes

Today's focus

Perspectives

1 Trade ideas

Behavioral Finance & Economics

A Game of probabilities

B Superforecasting

C Cognitive capacities & mental capabilities

2 Trade sizing

Artificial Intelligence & Big Data

α +110bp

3 Portfolio construction

Efficient Implementation

WE ARE IN A "GAME" OF PROBABILITIES

Are we actually good at assessing probabilities?

THE MONTY HALL PROBLEM

A   B   C
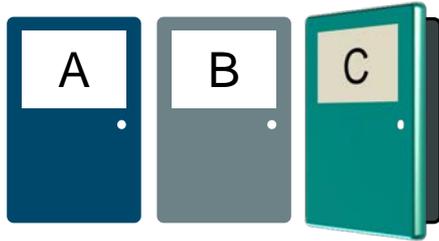
SHOULD YOU SWITCH DOORS?

Decision making is more than pure rationality

Real investors are "regret averse"

THE BIRTHDAY PARADOX

The chance of at least two people in a room of x people sharing the same birthday

Room of 2 people	→	**~ 0.3%** (1/365)
Room of 23 people	→	**~ 50%**
Room of 75 people	→	**~ 99.9%**

Strange, counter-intuitive, and completely true

→ Not actually a paradox

Our brains can't handle the compounding power of exponential growth

FRAMING

Most individuals would choose

Chance to win	
25%	**75%**
$1,000	$0

Win **guaranteed**

$240

due to the preference for **guaranteed gains**

At the same time, the majority would prefer

Chance to lose	
25%	**75%**
$0	$1,000

Lose **guaranteed**

$750

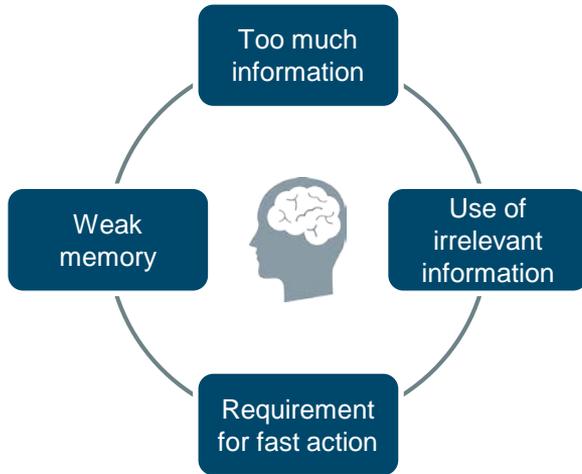willing to take a risk to avoid a sure loss (**loss aversion**)

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Can people do better?

- **In 2011**, the CIA/IARPA staged a geo-political forecasting tournament called "**The Good Judgment Project**"

- Thousands of average American citizens voluntarily took part in a long-running experiment to predict the outcomes of global events, e.g. the collapse of foreign regimes or the spread of deadly outbreaks.

- <u>Idea:</u> Can normal people, without access to top-secret information, forecast the outcomes of global events with an accuracy better than intelligence analysts?

- "Team Good Judgment, led by Philip Tetlock and Barbara Mellers of the University of Pennsylvania, beat the control group by more than 50%. **This is the largest improvement in judgmental forecasting accuracy observed in the literature**."
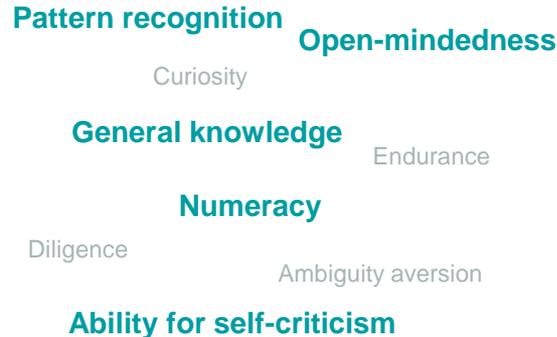Steven Rieber, Program Manager (IARPA)

Forecast accuracy

IARPA goals

Competition cancelled after year 2

Year 1   Year 2   Year 3   Year 4

■ Team Good Judgment   ■ Best of the rest
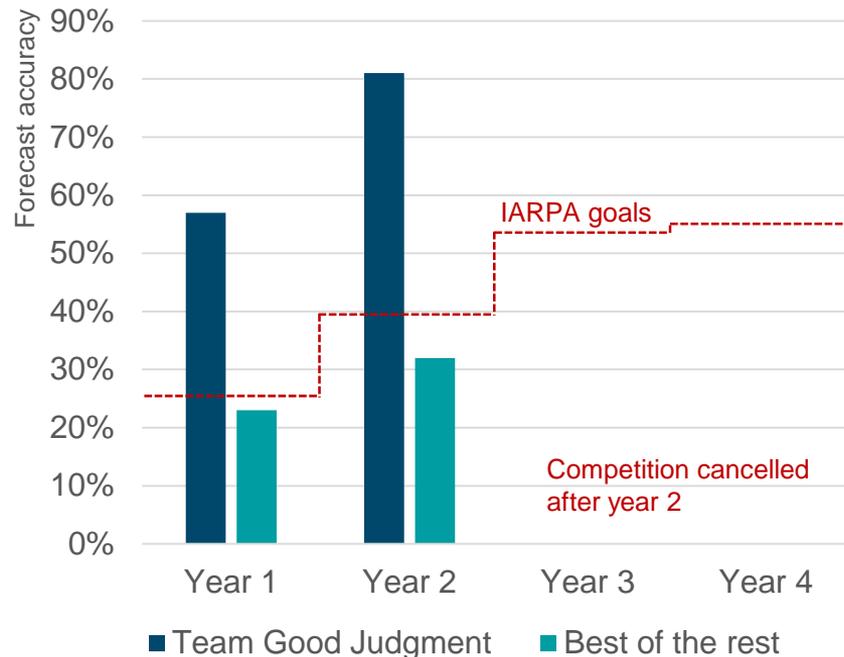
B WHAT IS THE SECRET OF SUPERFORECASTERS

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Everyone's starting point

- Too much information
- Use of irrelevant information
- Requirement for fast action
- Weak memory

Biases are human and apply to everyone, superforecasters included.

Characteristics of a superforecaster

Pattern recognition

Open-mindedness

Curiosity

General knowledge

Endurance

Numeracy

Diligence

Ambiguity aversion

Ability for self-criticism

Research has linked **certain characteristics** to better forecasting ability. Superforecasters display such traits, such as willingness to listen and quickly be convinced by good arguments – even if they challenge their own convictions.

Good to know ⓘ

The **Brier Score** measures the accuracy of profitability estimates if the result is known.
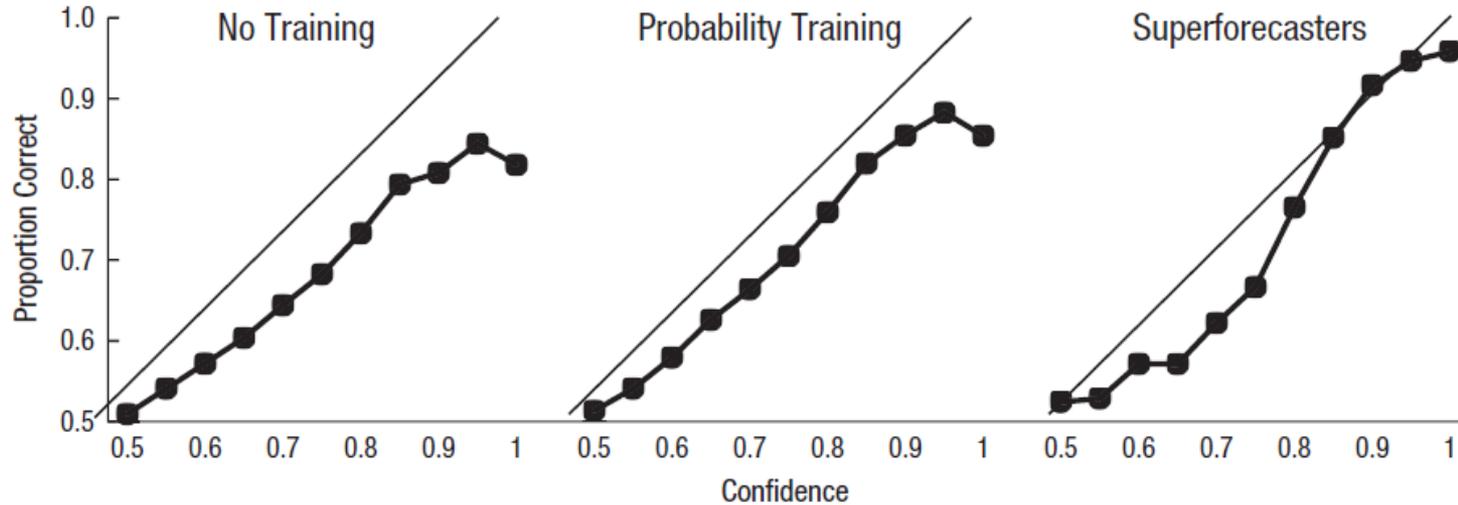
Zero is a perfect score (any questions closed with „Yes" were forecasted at 100%, likewise questions closing with „No" were forecasted at 0%).

A score of 0.5 is the expected value using random chance.

Omniscience — Reverse clairvoyance

"Superforecaster"

~0.39   ~0.50

0   ~0.14   //   2

Typical forecaster   Random
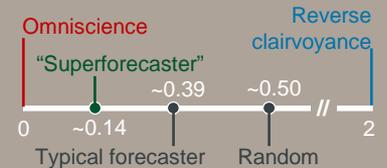
WHY SUPERFORECASTERS DELIVER

Calibration & Overconfidence

For superforecasters, it makes a huge difference whether assigning 90% probability or 99% probability

Superforecasters calibrate better and get the tails right

B HOW CAN YOU IMPROVE YOUR OWN FORECASTS?

Debiasing

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POTENTIAL BIASES

Anchoring

Overconfidence

Loss aversion

Regret aversion

DEBIASING – WHAT'S IMPORTANT

COLLABORATE
Debiasing, like all behavioural change, only works in close collaboration with the individual. It needs to be seen as a helpful method to improve performance rather than a threat or top-down monitoring tool

UNDERSTAND
Understanding the specific decision-making biases at work in certain situations (and potential root causes) is an important pre-requisite

ALIGN
Incentives, processes and other institutional enablers need to be aligned with the aspired change, awareness of specific decision-making biases alone is insufficient

MONITOR
Continuous monitoring of adherence to agreed debiasing practices and regular feedback on the performance impact is important to support the establishment of actual debiasing routines

MEASURABLE IMPACT

Impact on	Example 1	Example 2
Potential performance uplift	250-300 bps	100-150 bps
Performance rankings	3rd to 1st quartile	2nd to 1st quartile

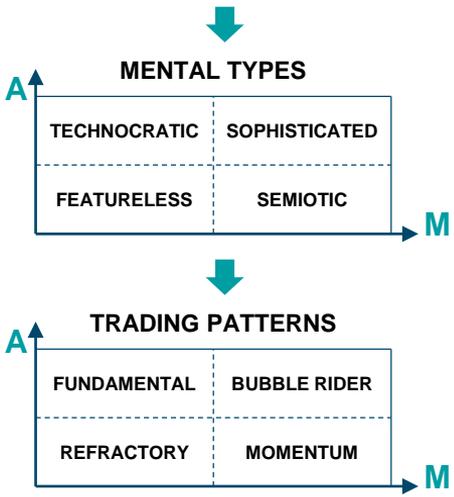Source: McKinsey & Company. As of July 2018.

Cognitive Capacities and mental capabilities (Hefti, Heinke, Schneider)

MENTAL CAPABILITIES

Analytical capabilities

Mentalizing Capabilities

MENTAL TYPES

A		
TECHNOCRATIC	SOPHISTICATED	
FEATURELESS	SEMIOTIC	M

TRADING PATTERNS

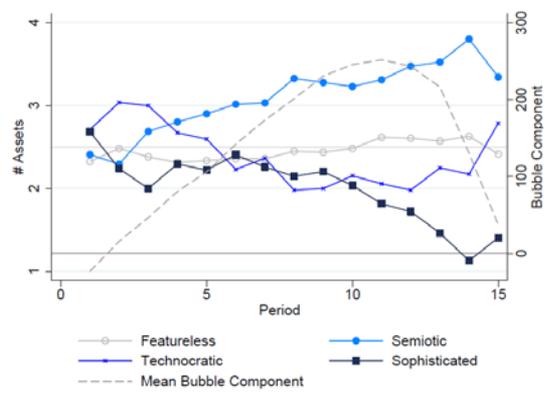| A		
FUNDAMENTAL	BUBBLE RIDER	
REFRACTORY	MOMENTUM	M

EXPERIMENT: TRADING GAME

Difference in Trading Income (in rappen)

Initial endowment: 2500 rappen
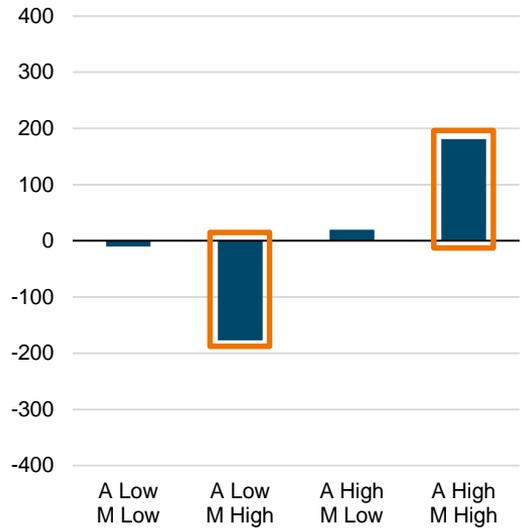
DISTINCT TRADING PATTERNS

Figure: Type-wise Mean Asset holding

Source: Hefti, Andreas M. and Heinke, Steve and Schneider, Frédéric, Mental Capabilities, Heterogeneous Trading Patterns and Performance in an Experimental Asset Market (May 29, 2018). University of Zurich, Department of Economics, Working Paper No. 234.

WHAT'S NEXT?

Improving quality and speed of base-rate estimation

THE FORECASTING MARKET IS GAINING TRACTION

THE NEXT GENERATION OF SUPERFORECASTING

Combining human and machine-driven forecasting

AI is very powerful in providing "base rate" estimates

The «Superhuman»

Source: Smart-Forecast.com

TAKEAWAYS

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1   **WORLD IS CHANGING FAST**
In AM, (A) value-add Performance and (B) individualized digital client Solutions will be the main drivers and differentiators

2   **ONE AREA OF IMPROVEMENT IS BEHAVIORAL ECONOMICS**
"The human world is neither rationale nor efficient"

3   **BE HONEST WITH YOURSELF AND FOLLOW LATEST RESEARCH**
Keep Score!

4   **REFLECT, ADAPT AND IMPROVE YOUR OWN PREDICTION POWER**
De-biasing, Superforecasting, Mental capabilities

5   **IN THE "GAME" OF PROBABILITIES, SKILLED INVESTORS ARE ONLY MARGINALLY, YET CONSISTENTLY BETTER THAN THE AVERAGE**

6   **USE MACHINE-LEARNING AND AI WHEREVER MORE EFFICIENT THAN THE HUMAN BRAIN**
The real power is in combining AI and the trained human brain

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