

FORESIGHT•WORKS



INVESTING IN THE ENERGY TRANSITION: AN EVIDENCE-BASED APPROACH

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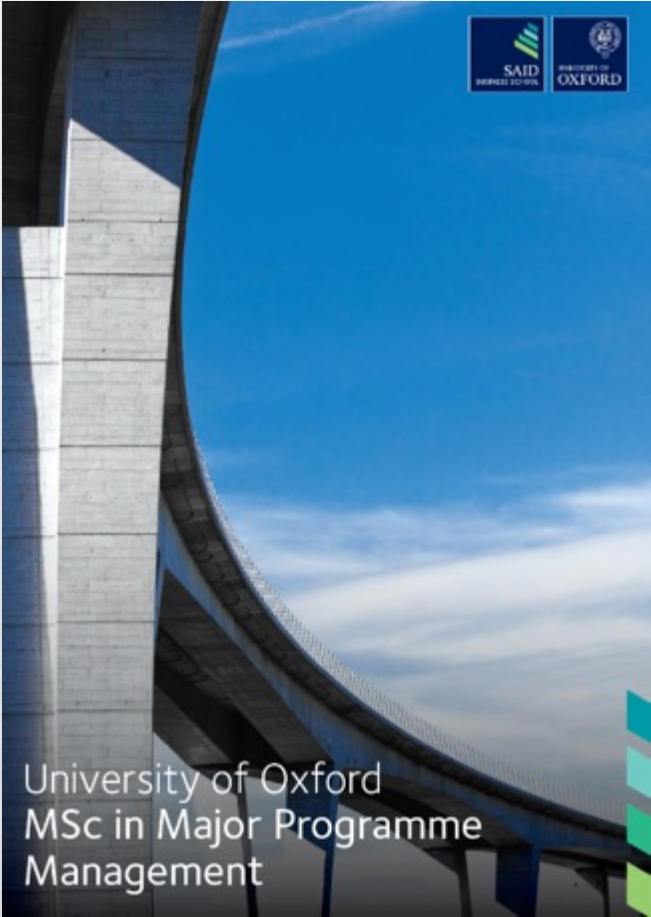


GREETINGS FROM OXFORD



UNIVERSITY OF
OXFORD

BUILDING MAJOR PROGRAMME DELIVERY CAPABILITY: OXFORD SAID'S COURSES



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AGENDA: THE 3CS

OXFORD-STYLE EXECUTIVE BRIEFING

CHALLENGES

CAUSES

CURES

WHAT ARE MAJOR & MEGAPROJECTS



World's first commercial GTL plant, Bintulu, Malaysia.



Floating facility in the Gulf of Mexico (2.9 KM)

**MEGAPROJECTS ARE LARGE-DOLLAR INVESTMENTS,
TYPICALLY US\$1B+, THAT HAVE THE POTENTIAL TO
TRANSFORM COMPANIES AND COUNTRIES**

MAJOR & MEGAPROJECTS EXAMPLES

- Energy
- Aerospace
- Defence
- Rail projects
- Power projects
- Oil and gas projects
- Transport infrastructure
- Data Centers
- Semiconductor fabs
- ICT systems
- Mega events
- Urban / Smart Cities
- Dams
- Big science
- Water projects
- And many more!

**US\$ 6-9 Trillion dollar
starts each year!!**



THE OPPORTUNITY



The Murex was the first tanker to deliver kerosene to Asia in 1892



Prelude: The world's largest floating liquefied natural gas facility

THE OPPORTUNITY



A view of the port of Singapore in February 1974

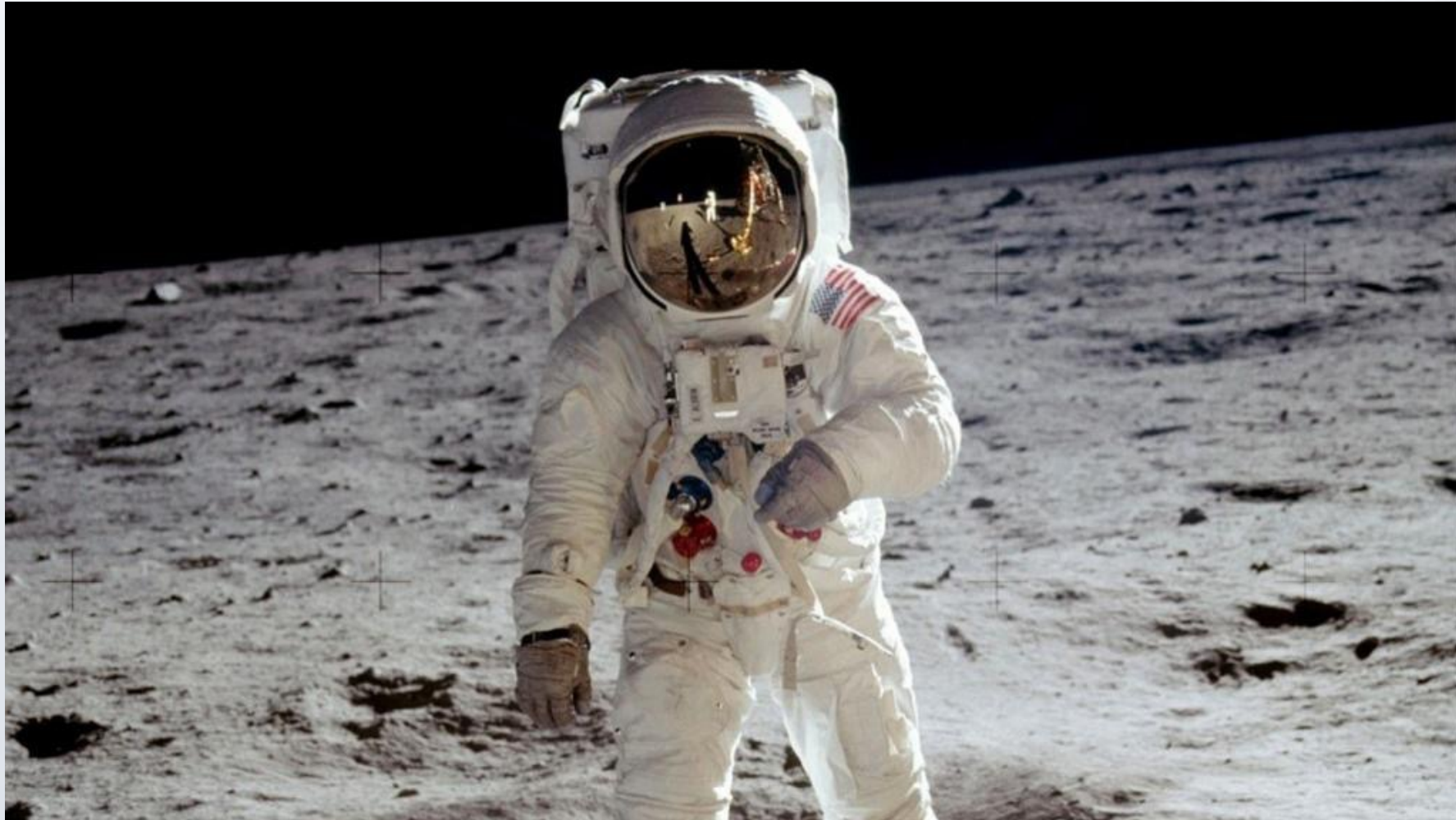


Now one of the world's busiest container ports

NATION BUILDING



CIVILISATION DEFINING



THE 3CS



CHALLENGES

CAUSES

CURES

TAKEAWAY 1: MAJOR AND MEGAPROJECTS ARE HARD TO DELIVER

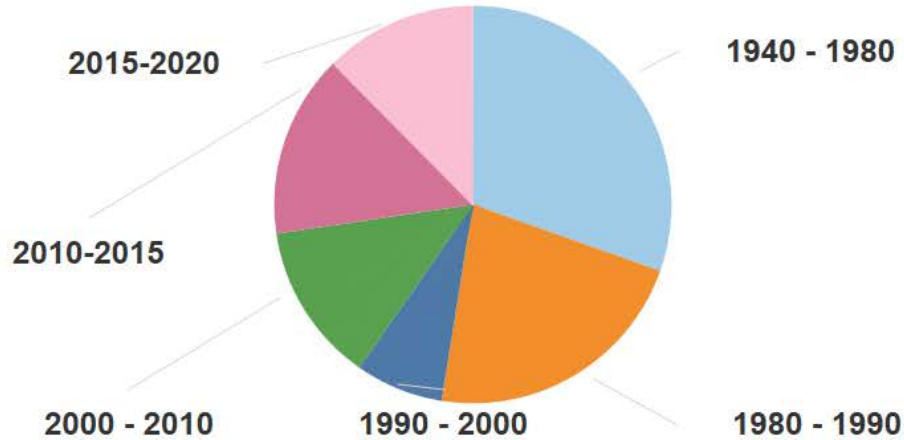
	DATA CENTERS	ROADS	BRIDGES/TUNNELS	ENERGY	MINING	RAIL	DEFENCE	DAMS	IT CHANGE	OLYMPICS
COST OVERRUN	6%	25%	32%	36%	41%	42%	85%	90%	107%	156%
FREQUENCY OF COST OVERRUN	5 of 10	8 of 10	7 of 10	6 of 10	9/10	8 of 10	7 of 10	7 of 10	5 of 10	10 of 10
SCHEDULE OVERRUN	34%	39%	22%	38%	34%	42%	46%	44%	39%	0%
BENEFITS SHORTFALL	n/a	7%	-7%	n/a	n/a	-51%	47%	-11%	-24%	n/a
COST BLACK SWANS	0%	8%	11%	7%	1%	5%	13%	10%	18%	5%
Ø duration (years)	1.3	5.6	8.0	5.3	2.5	8.2	9.2	8.2	3.3	7.0

7/10 have a time overrun

Sources: Ansar et al. (2014; 2016), Budzier & Flyvbjerg (2013), Flyvbjerg (2015), Flyvbjerg et al. (2016), Pohler (2013)

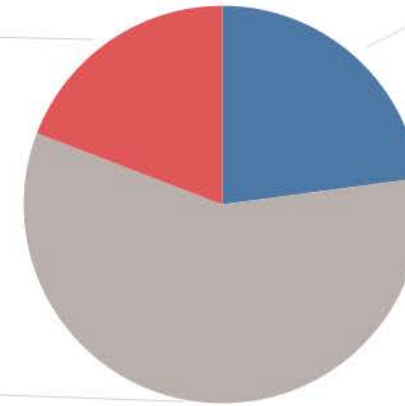
Database as of July 2023

WE ANALYZED 669 PROJECTS WORTH OVER 1.2 \$TRILLIONS IN 2022 DOLLARS

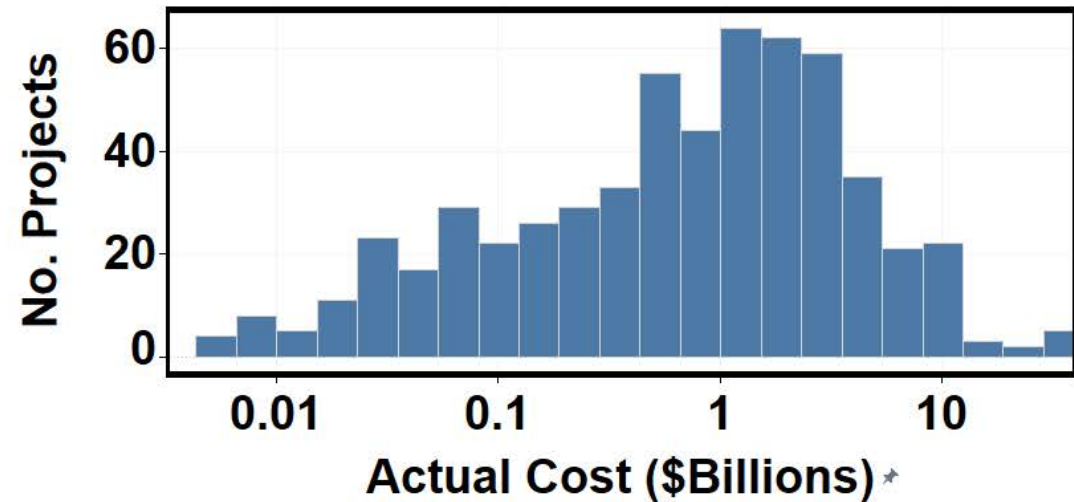
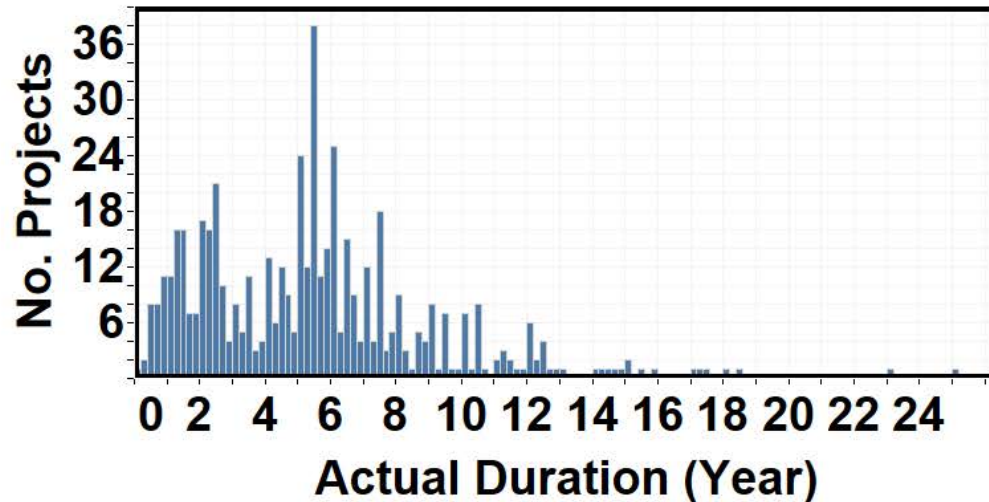


Wind: 128 Projects

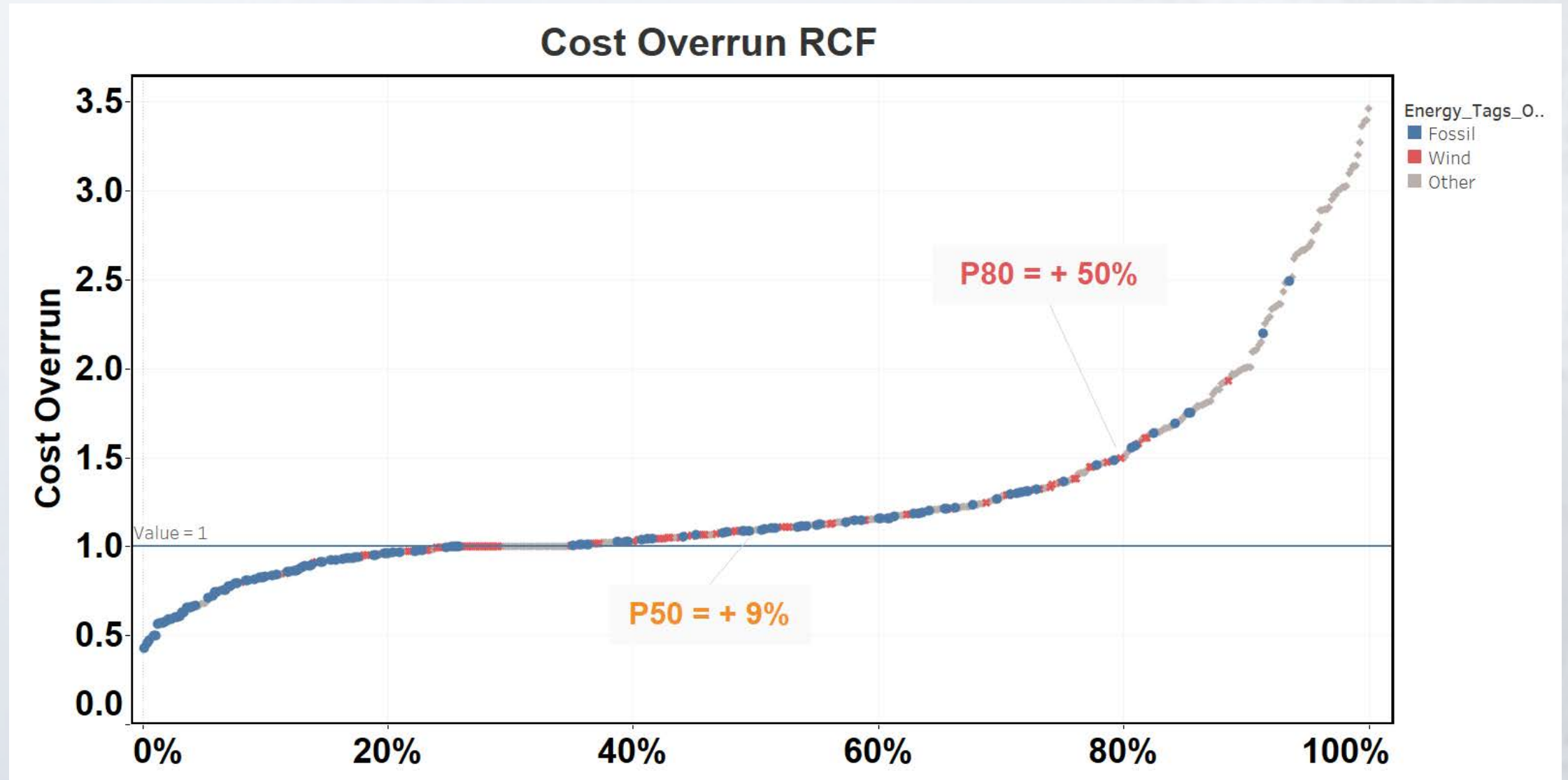
Fossil: 153 Projects



Other: 388 Projects

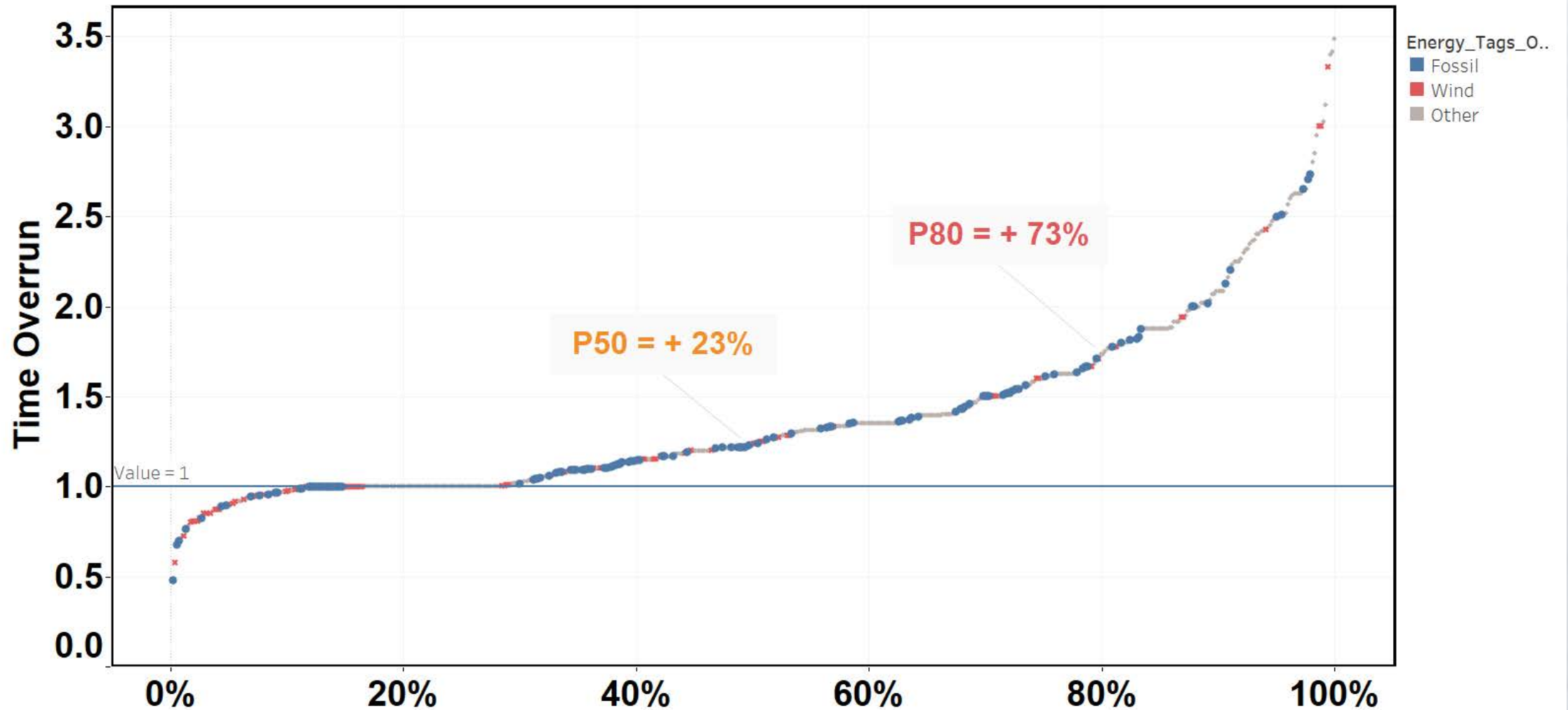


THE CHALLENGES OF MEGAPROJECTS



THE CHALLENGES OF MEGAPROJECTS

Time Overrun RCF



TAKEAWAY 2: PROJECT OUTCOMES IMPACT CORPORATE VALUE



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The Value of the Firm

Sum of the Value of All its Projects

VALUE CREATION, LIKE SAFETY, IS EVERYONE'S RESPONSIBILITY

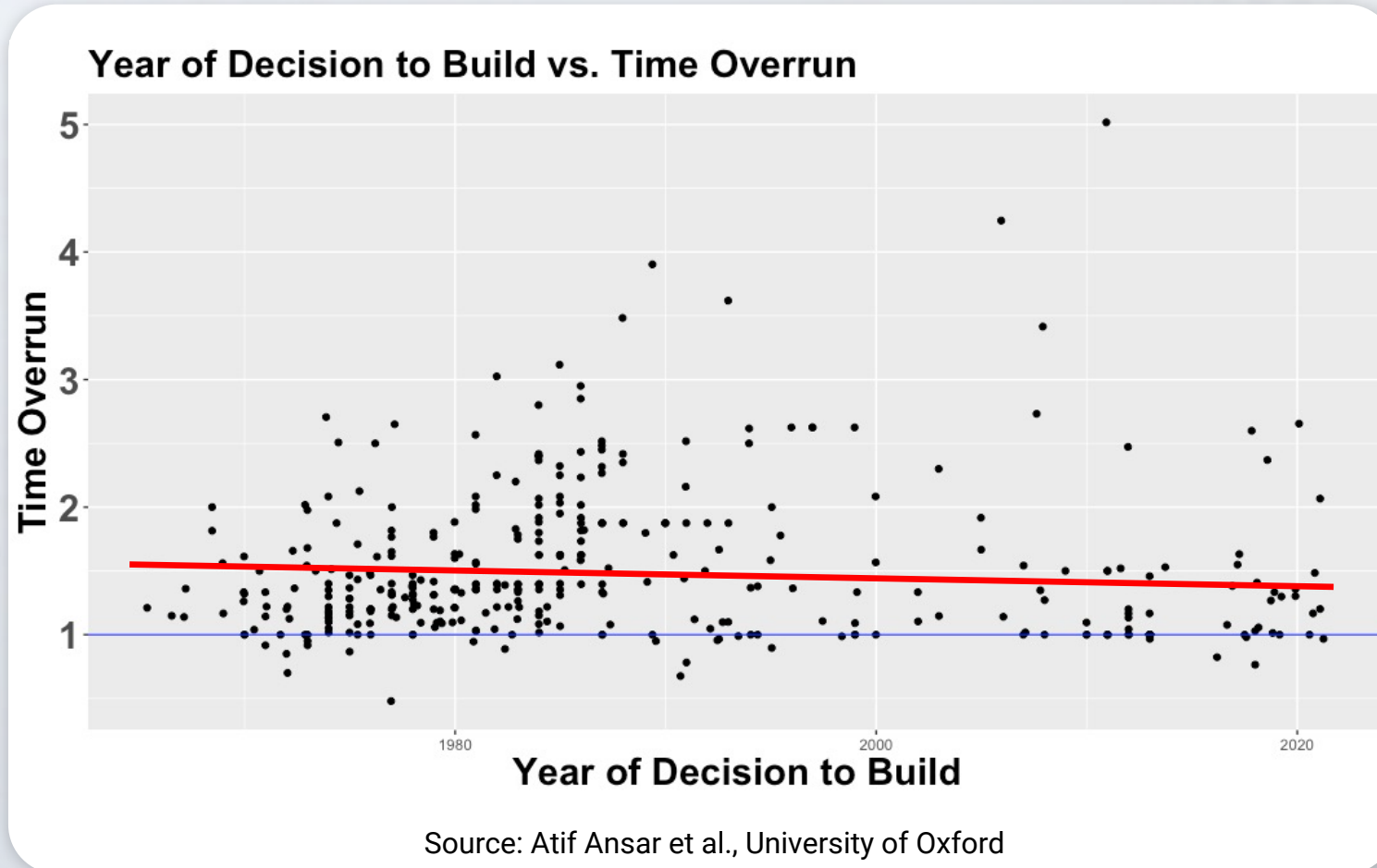
A University of Oxford research paper on the oil & gas sector reveals that companies with consistent project delivery enjoy increased gross margins, steadier cash flows, elevated stock valuations, and, on average, 30% higher market capitalization compared to their inconsistent counterparts.

Market rewards good project delivery.



TAKEAWAY 3: PROJECTS SEEM NOT TO LEARN FROM THE PAST

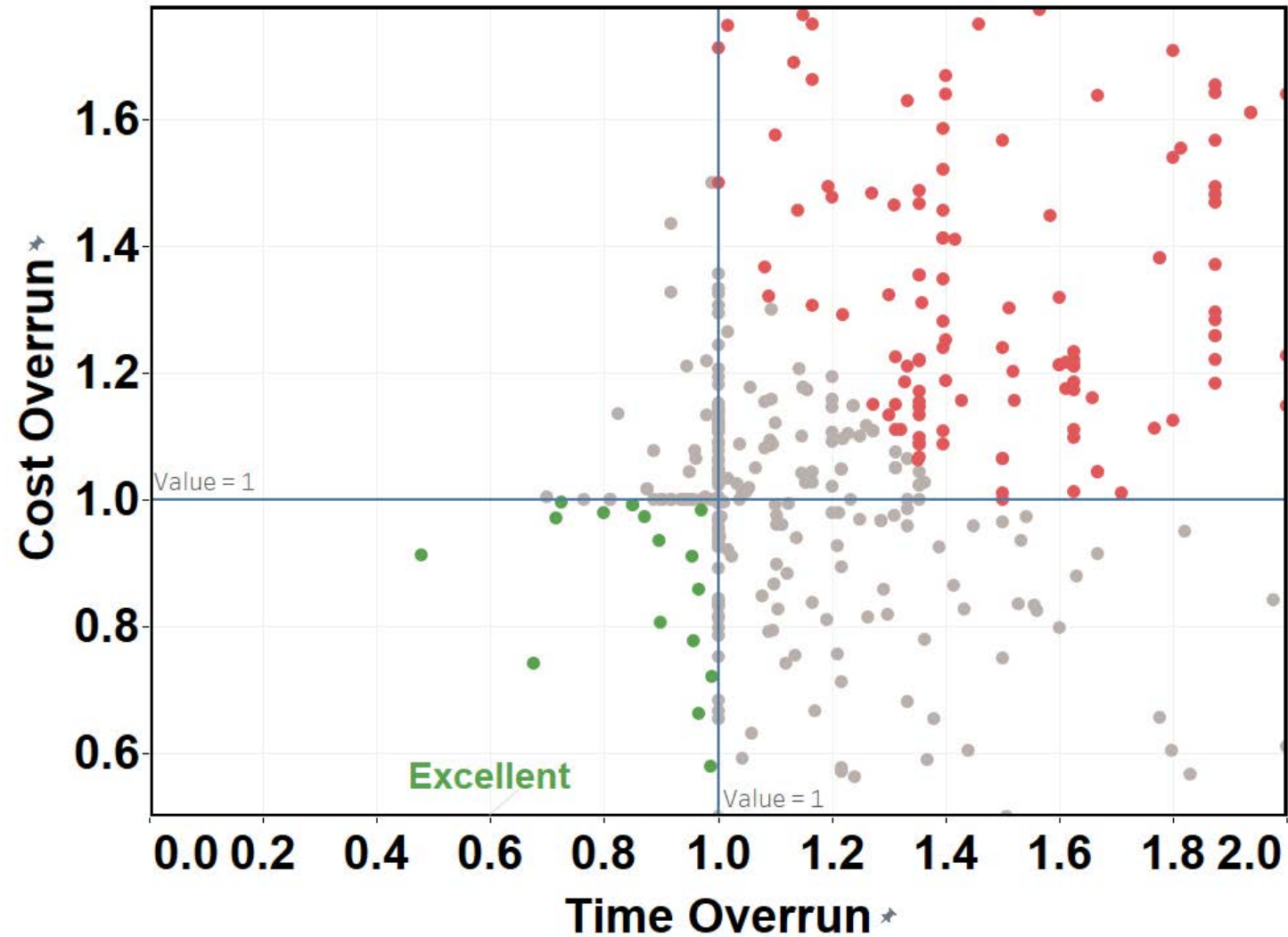
EXPERIENCE IS NOT THE SAME THING AS EXPERTISE



*Excluding Wind and Solar energy projects

...BUT WE CAN LEARN FROM THE PAST

Cost vs Time Overrun



TAKEAWAYS

- **Megaprojects face the challenges of time and cost overruns**
- **Cognitive biases and complexity cloud judgement**
- **Focus on time**
- **AI helps you improve planning, execution, and risk—key drivers for overall performance**

Thank You

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