Human vs machine intelligence

What's at stake, really?

Ekkehard Ernst

Research Department

@ekkehardernst

ernste@ilo.org

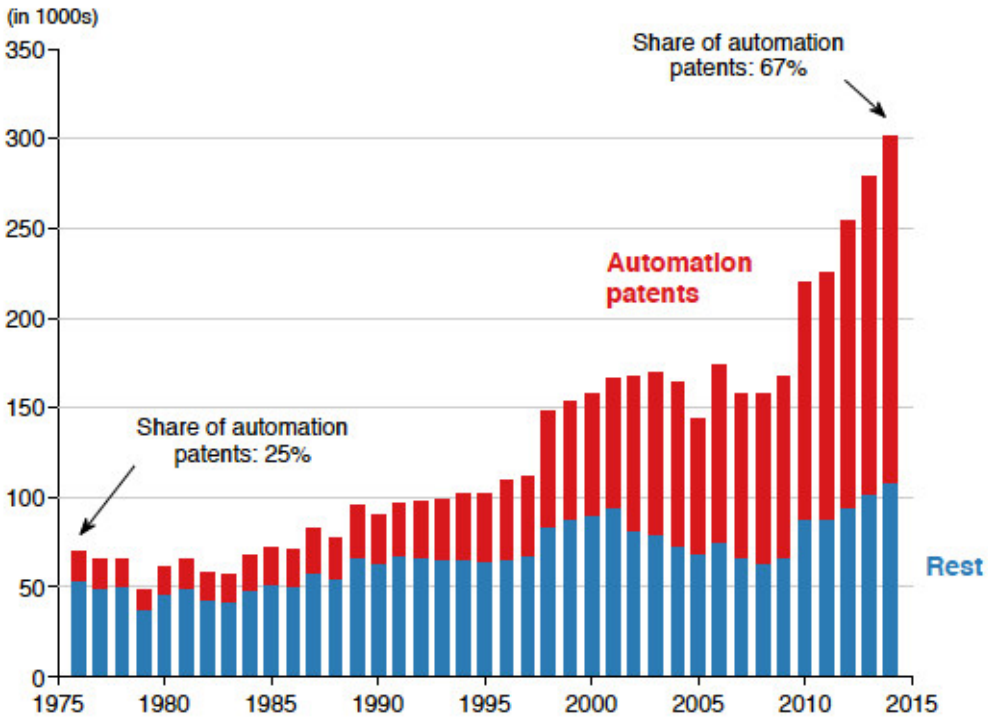
International Labour Organization

Take-home messages

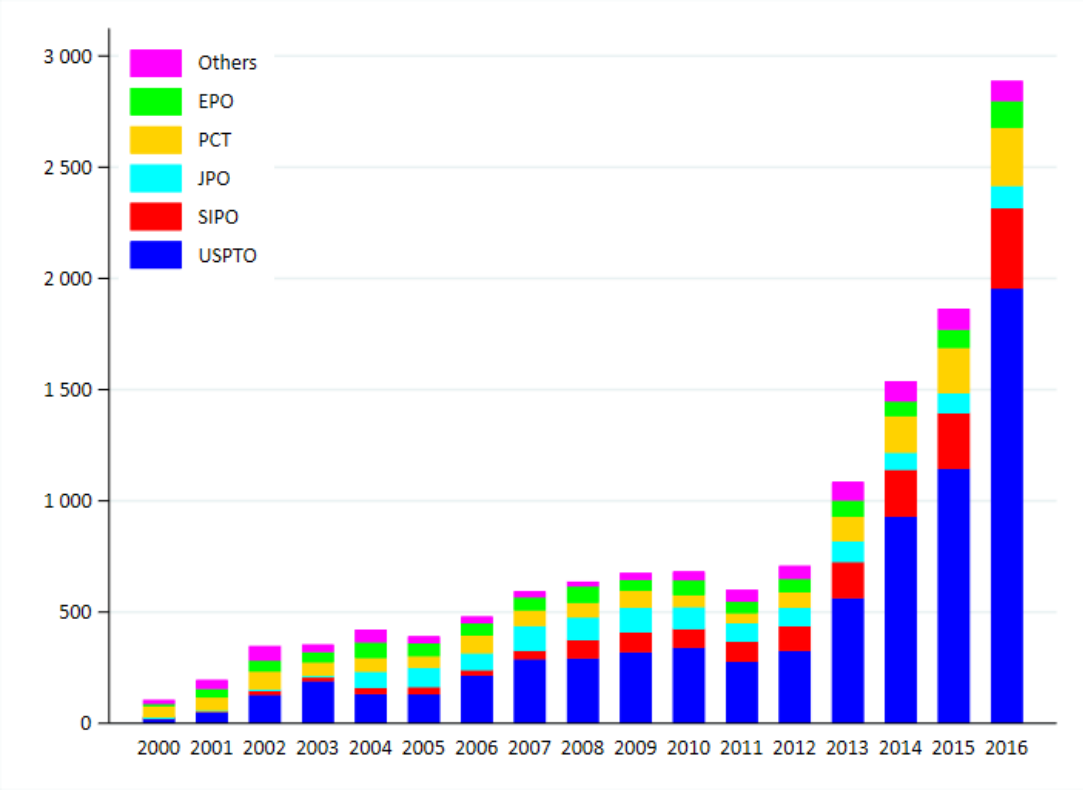
1) Solow paradox kicking and well alive
2) New technologies (AI) unlikely to lead to massive job losses
3) New skills yes, but not necessarily technical ones
4) Bullshit jobs, not productive ones are on the rise
5) The data economy increases inequality further
6) Ecological limits to AI will constrain any changes

Why do we talk about AI now?

Share of automation patents in total

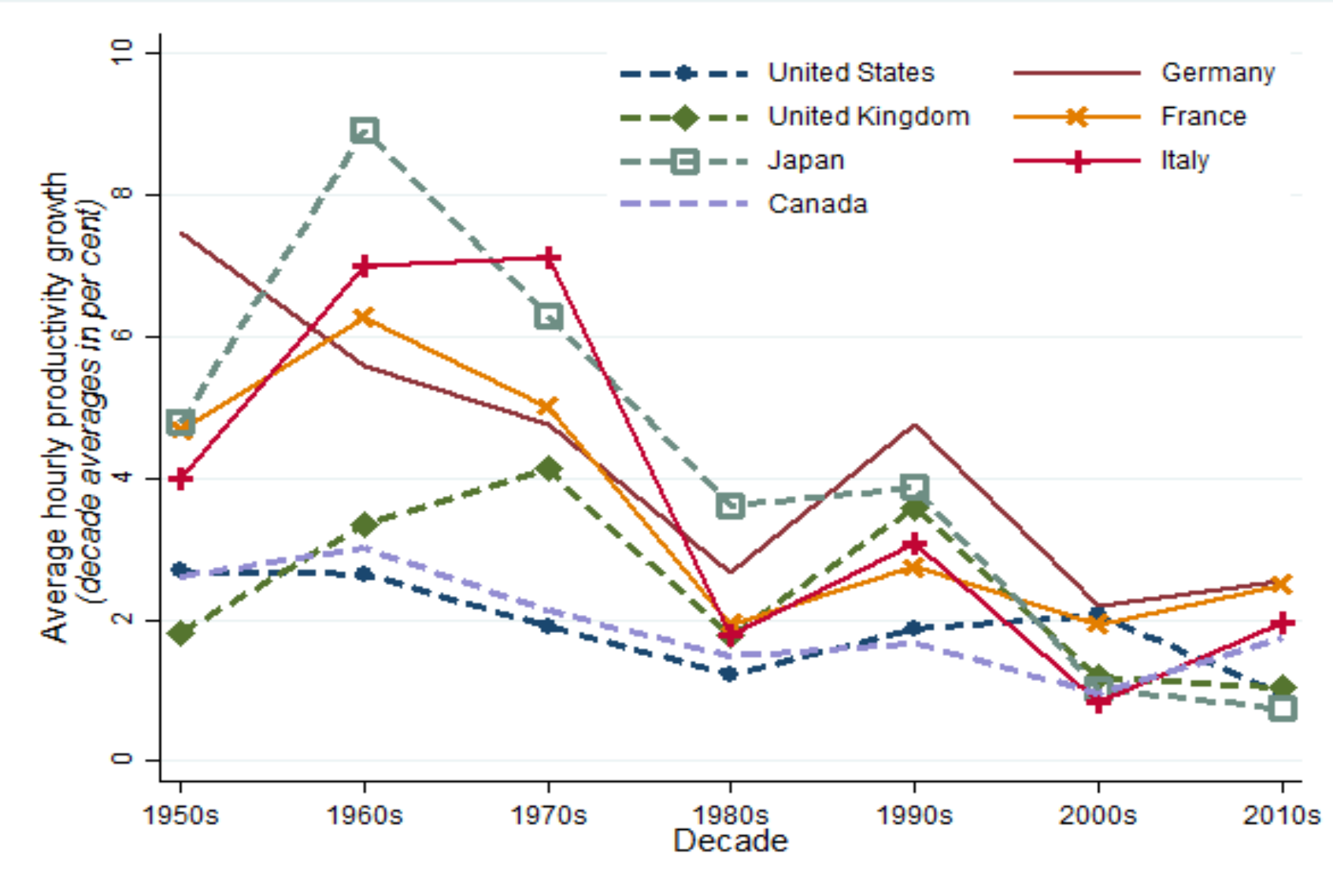


Number of AI patents granted by country



AI does not seem to raise productivity

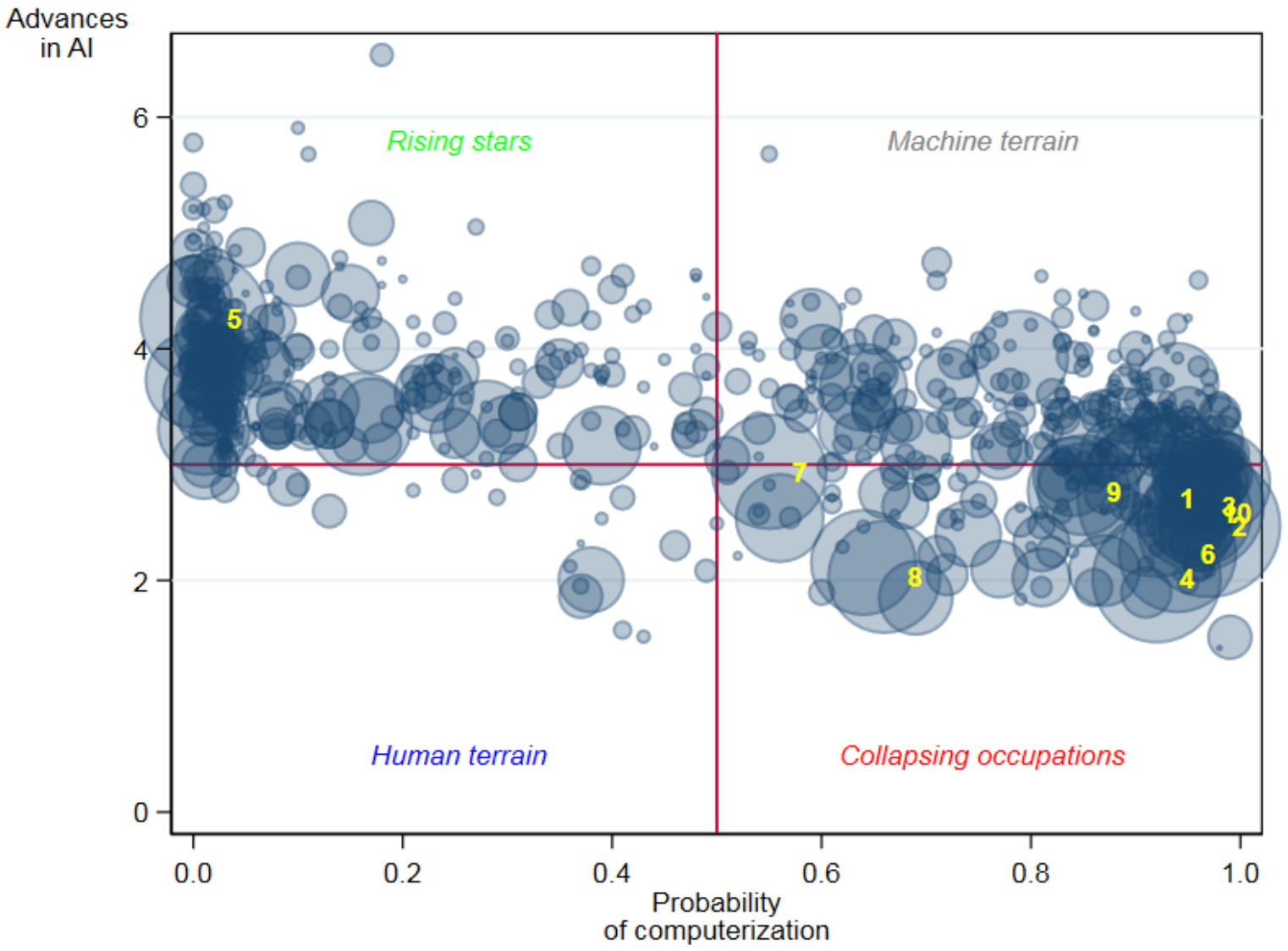
Hourly productivity growth rates in G7 countries (decade averages)



AI is more than automation

		Computerization risk	
		Low	***High***
Level of transformation	***Low***	Needs human presence: • Specialized education • Trainers, coaches • Comedians, musicians	Strong reduction in employment: • Distribution • Personal assistants • Accountants
	High	Improved productivity: • Medical personal • Scientists, engineers • Pilots, navigation personal	Imminent job loss: • Executive assistants • (Lorry) drivers • Maintenance and reparation

Which jobs might disappear?

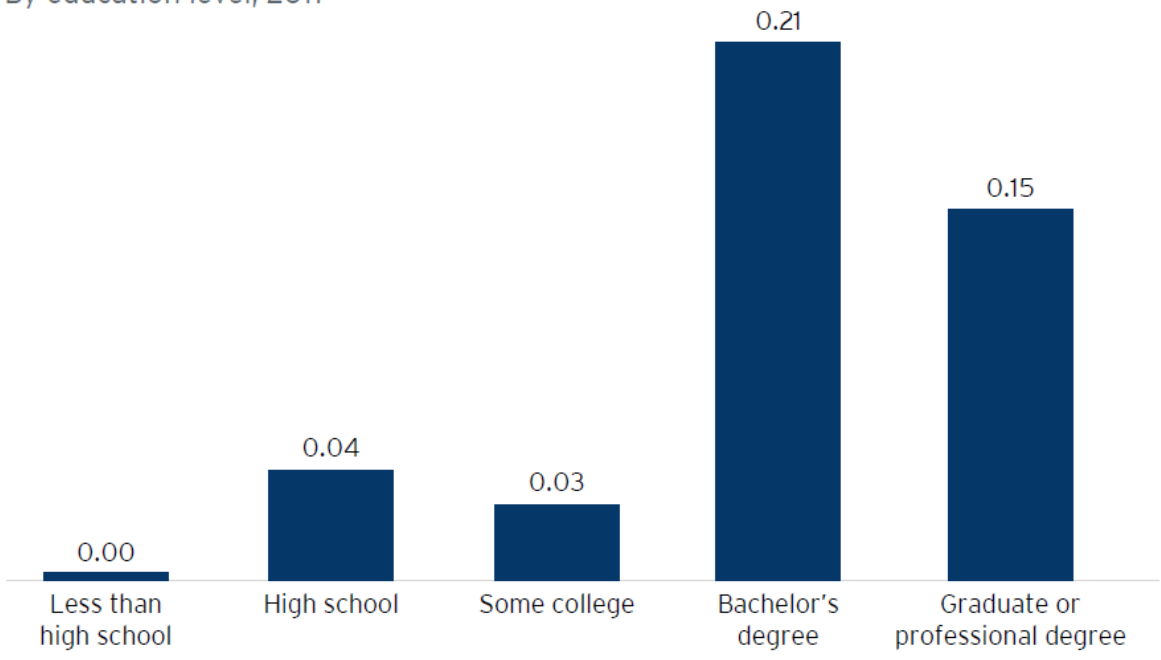


USA	
#	Type of occupation/job
1	Retail salesperson
2	Cashiers
3	Office clerks
4	Cooks and serving personnel
5	Nurses
6	Waiters and waitresses
7	Customer Service Representatives
8	Janitors and cleaners
9	Laborers and Freight, Stock, and Material Movers
10	Secretaries and Administrative Assistants

Occupational transformation

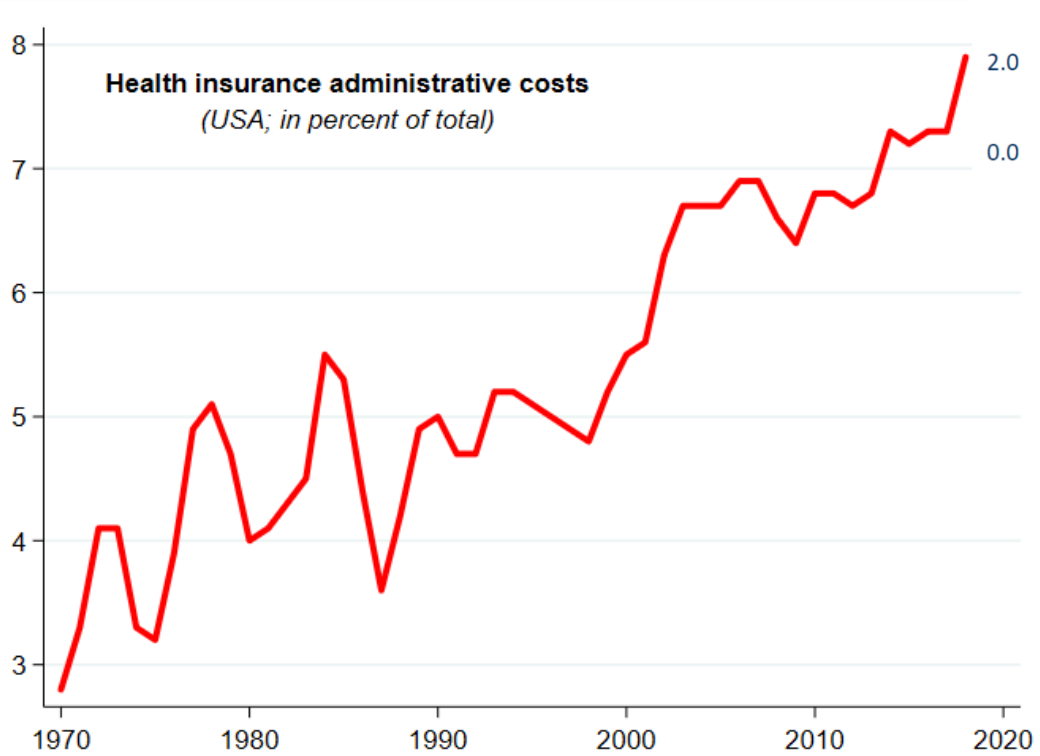
Verb	Example nouns
recognize	pattern, image, speech, face, voice, automobile, emotion, gesture, disease
predict	quality, time, performance, fault, behavior, traffic, prognosis, treatment
detect	signal, abnormality, defect, object, fraud, event, spammer, human, cancer
identify	object, type, damage, illegality, classification, relationship, importance
determine	state, similarity, relevance, importance, characteristic, strategy, risk
control	process, emission, traffic, engine, robot, turbine, plant, discharging
generate	image, rating, lexicon, warning, description, recommendation
classify	data, object, image, pattern, signal, text, electrogram, speech, motion

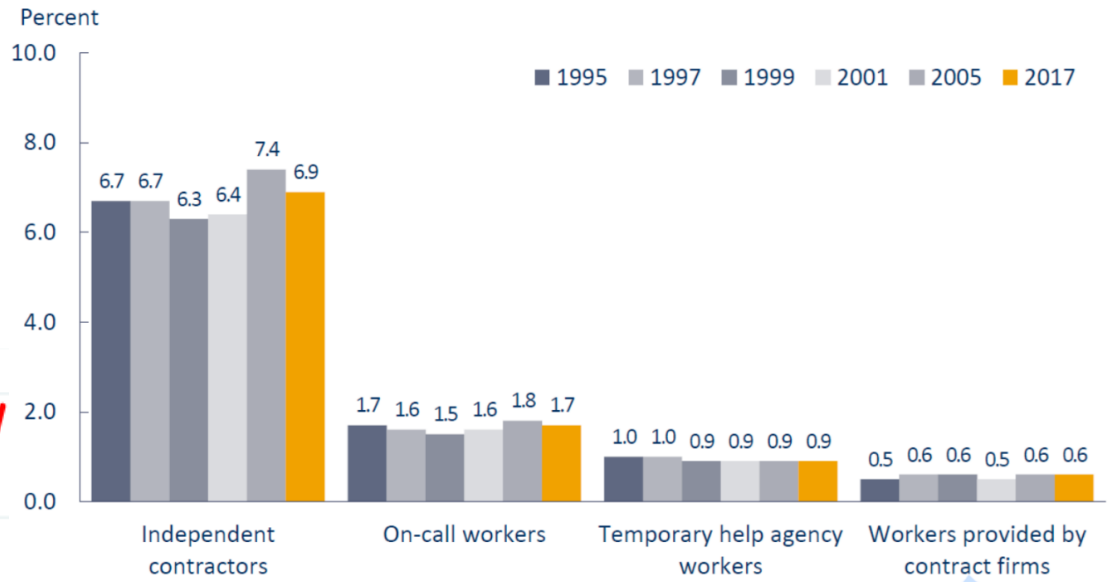
Figure 3. Average standardized AI exposure
By education level, 2017



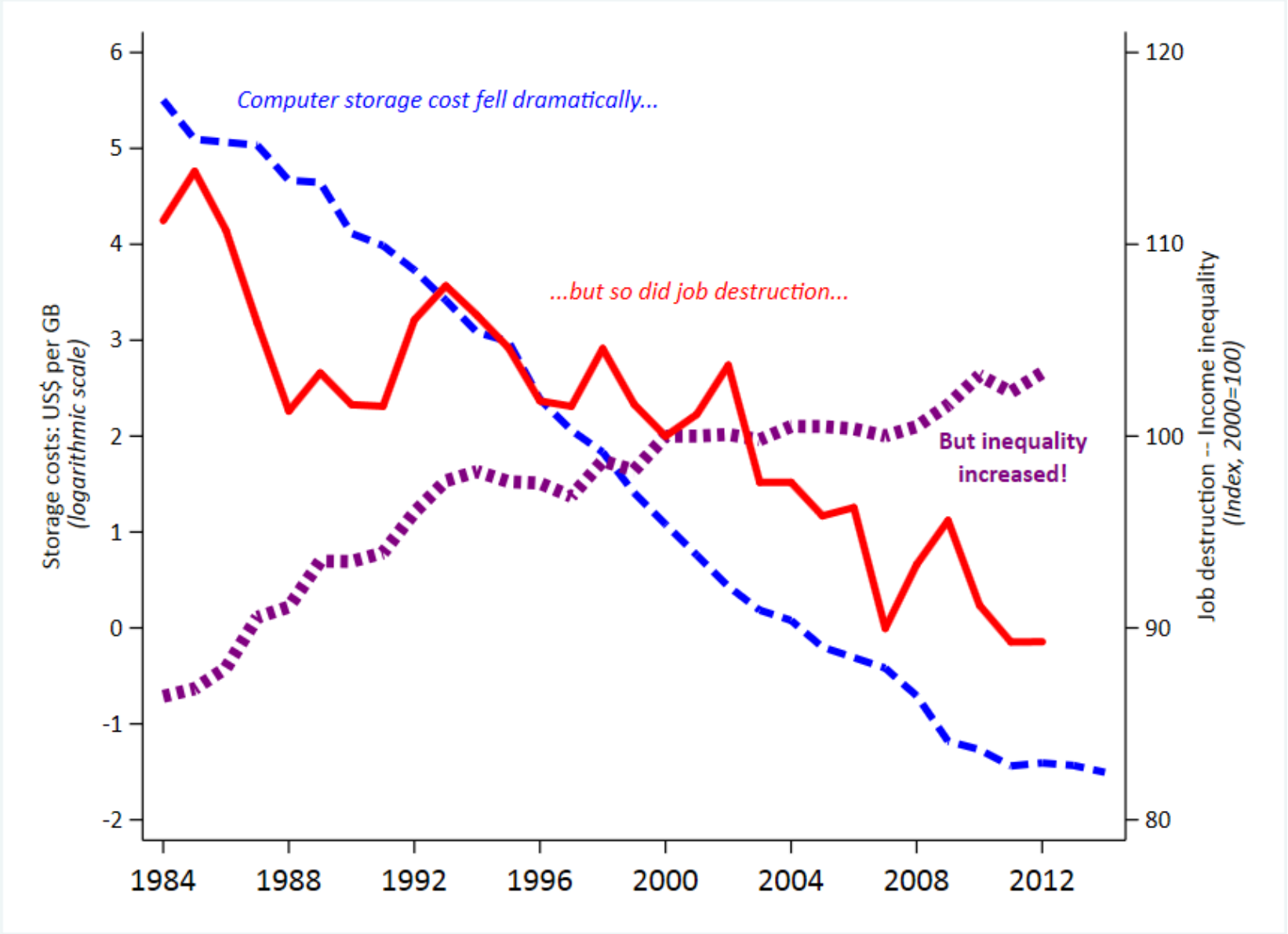
Source: Brookings analysis of Webb (2019) and IPUMS-USA ACS 1-year microdata

Brave new world … of bullshit jobs?





Rise in inequality rather than job loss



The data economy

Data portability

Open innovation systems

Data as labour

Ensuring just transitions

Digital taxation

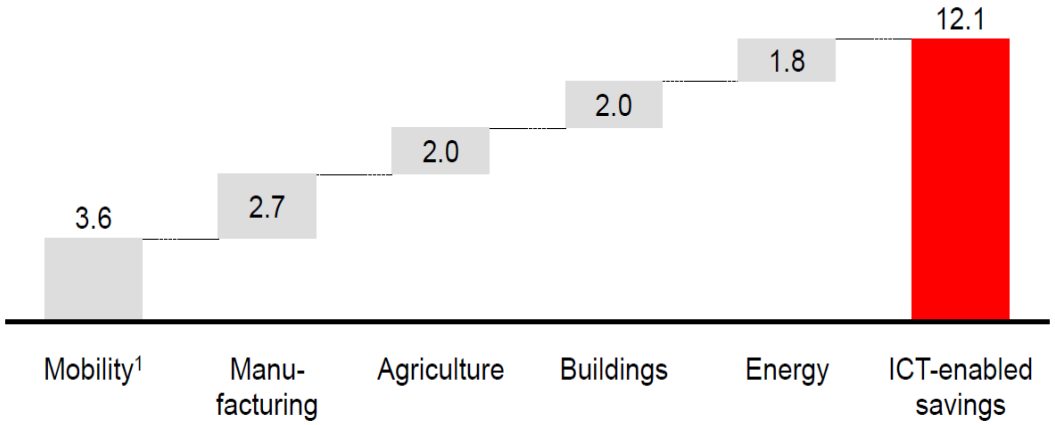
Sovereign data wealth fund

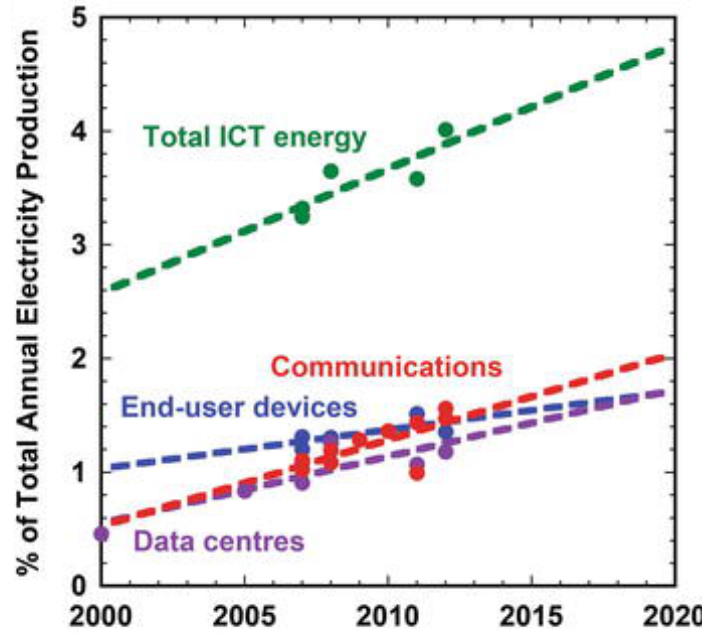
Digital social security

Profit sharing and wage negotiation

Growth beats efficiency

Figure 1: CO_{2e} abatement potential by sector (2030)



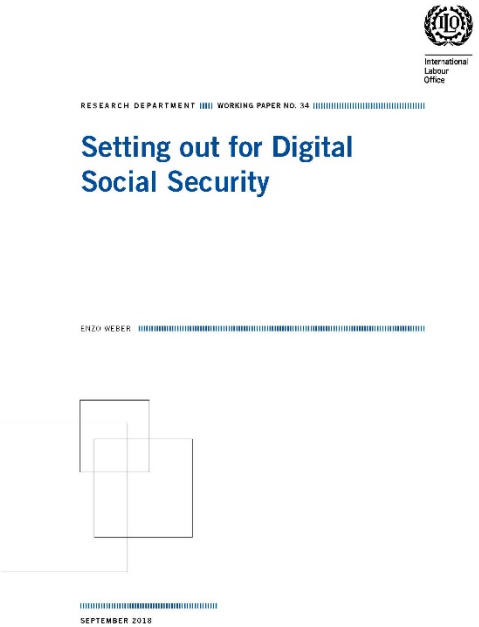


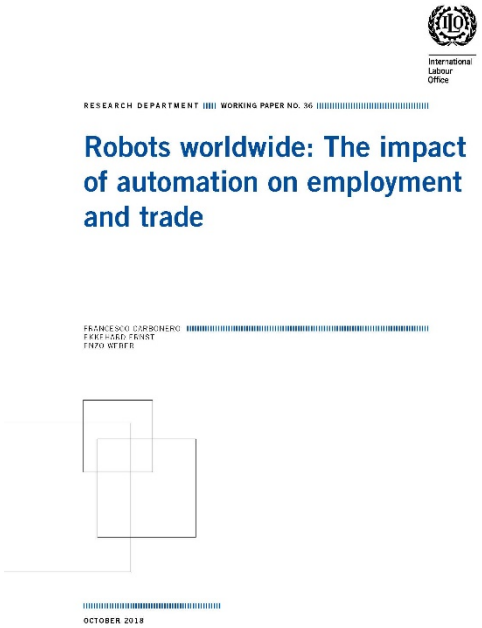
"Large neuronal networks today have a maximum of 1 million nodes but consume the energy of a nuclear power plant. The human brain has 84 billion neurons and runs on a slice of bread."

Chris Boos, AI expert and founder of Arago

Dilbert knows best!

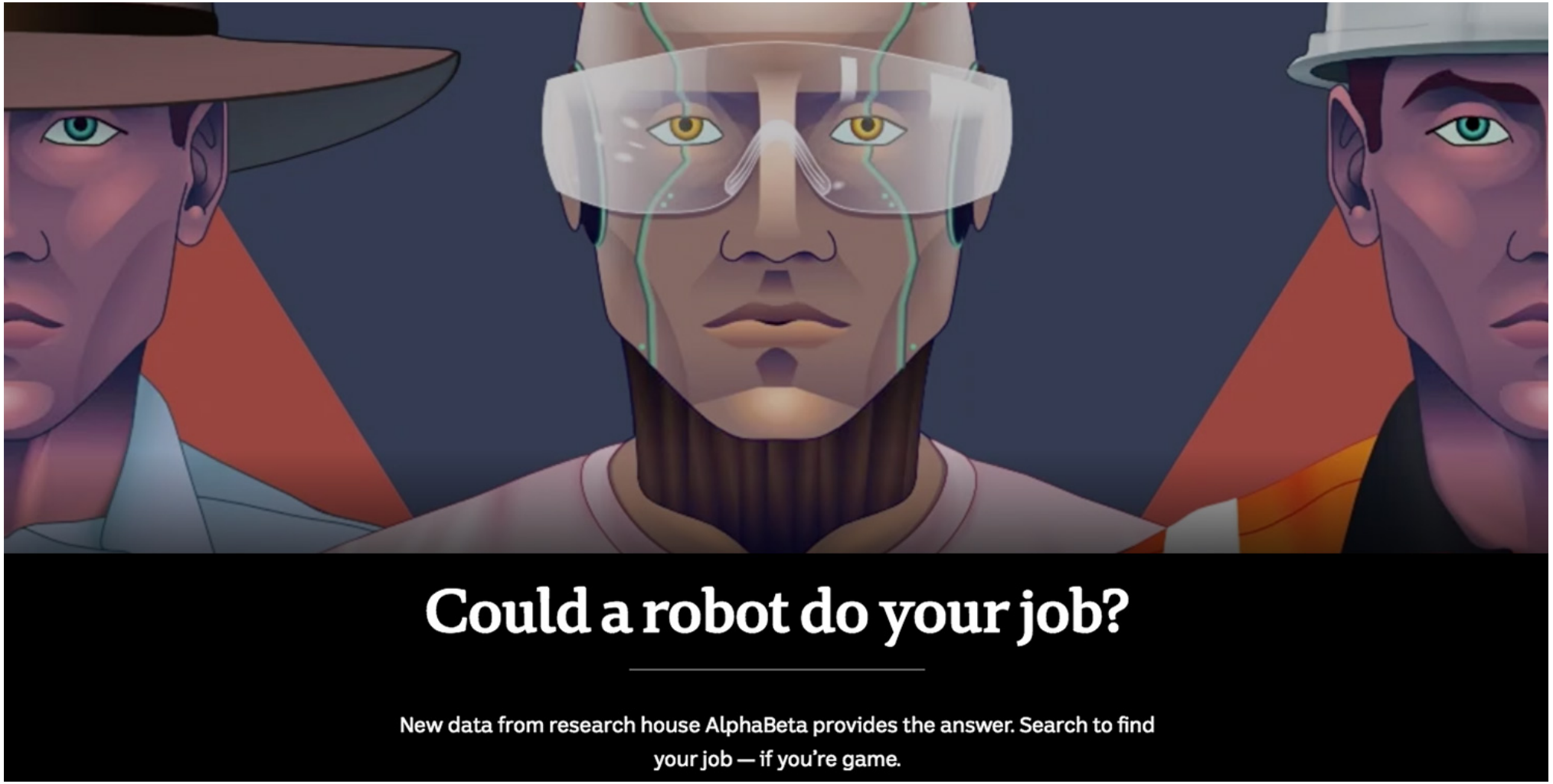
If you want to know more





https://www.ilo.org/research

Are you doomed to lose your job?



https://www.abc.net.au/news/2017-08-08/could-a-robot-do-your-job-artificial-intelligence/8782174