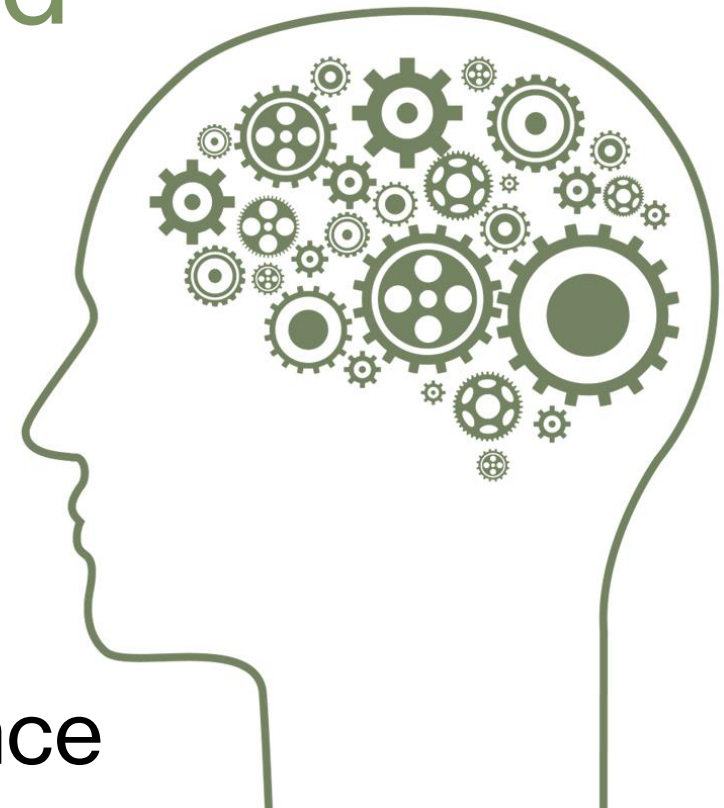
AI Adoption & Systemic Shocks

Insights from RAND's social and economic policy rethink effort



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April 17, 2025 | State of the Field Conference

We have been developing an integrative approach for navigating systemic shocks

Identification

Rapid literature review

Problem scoping with working groups

Identify key areas for analysis

Analysis

Qualitative study

Empirical analysis

Modeling and simulation

COMPASS

Develop scenarios

Map cascading impacts

Identify Tradeoffs, Barriers, Policy areas

Policy

Scope policy areas

Identify associated authorities

Recommend courses of action

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Identification

What is the pace of AI development?

4/17/2025

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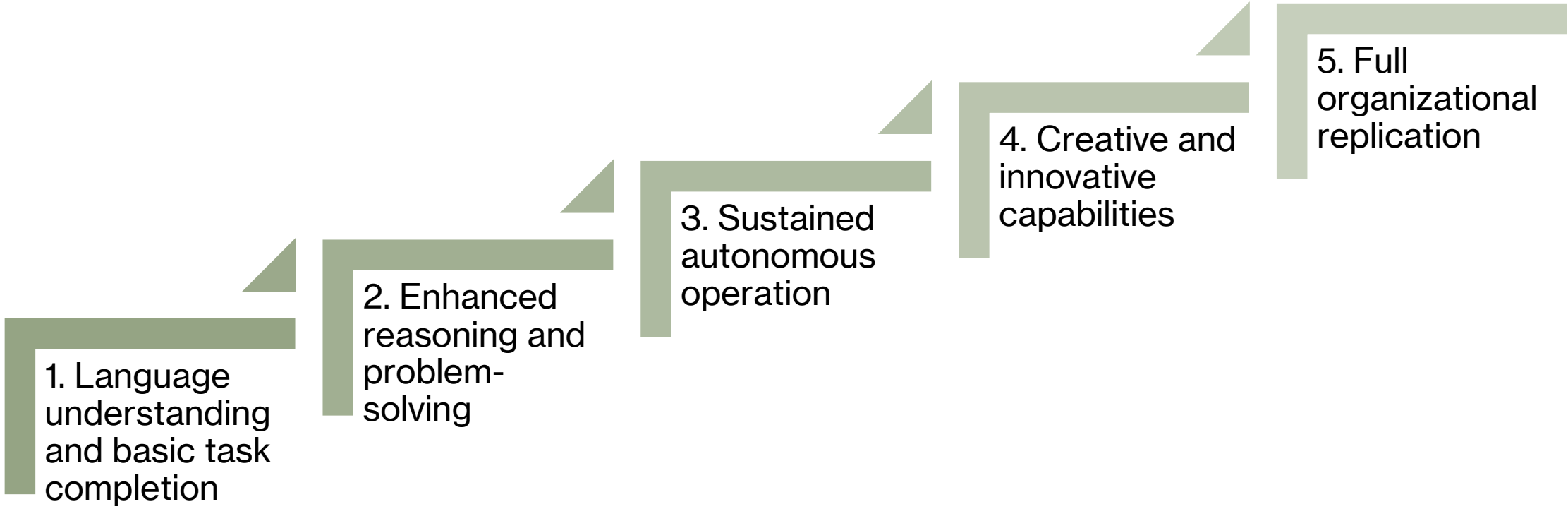
AI Capability Framework: What is the trajectory of AI?



For policy, it's the pace of adoption that matters most

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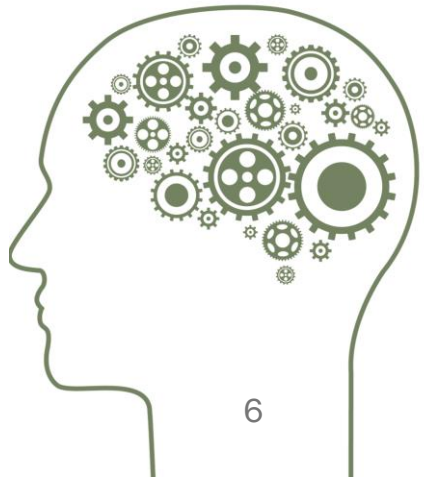
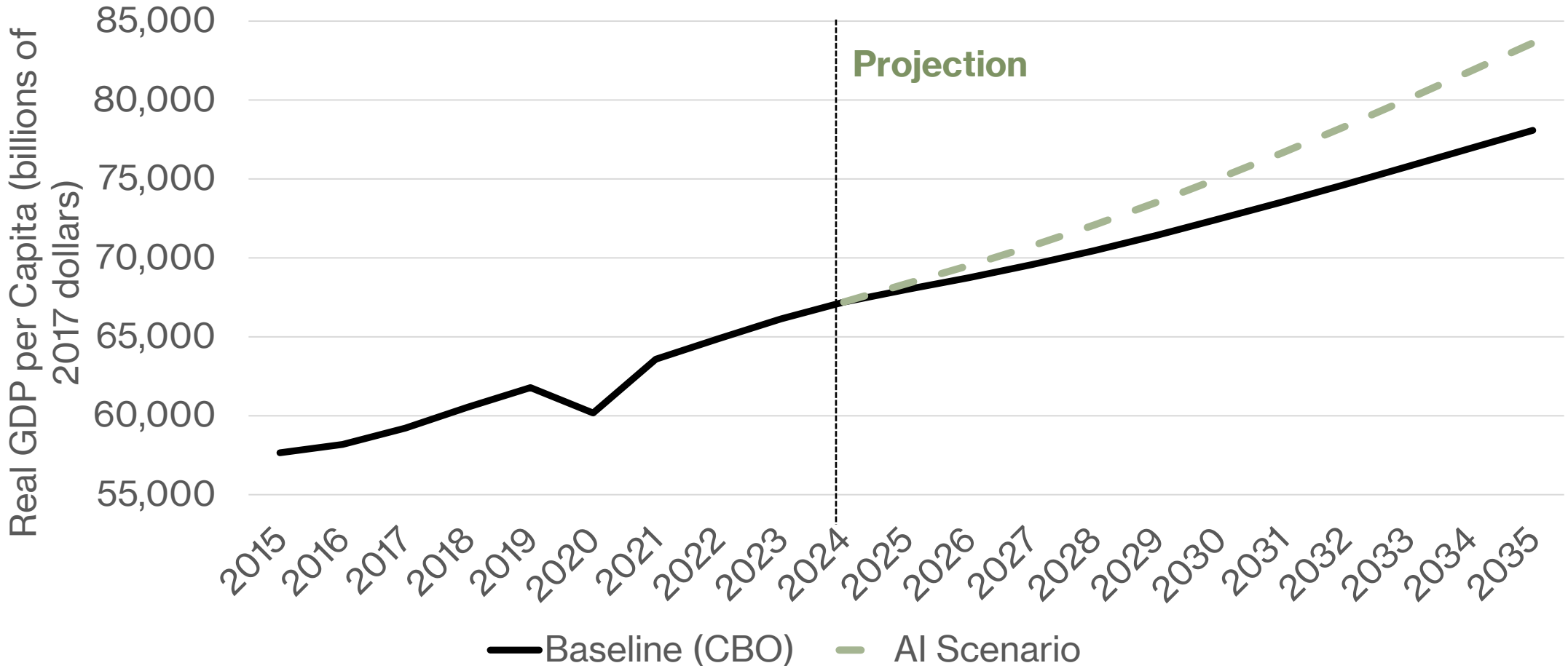
Analysis

AI adoption presents significant uncertainty and tradeoffs



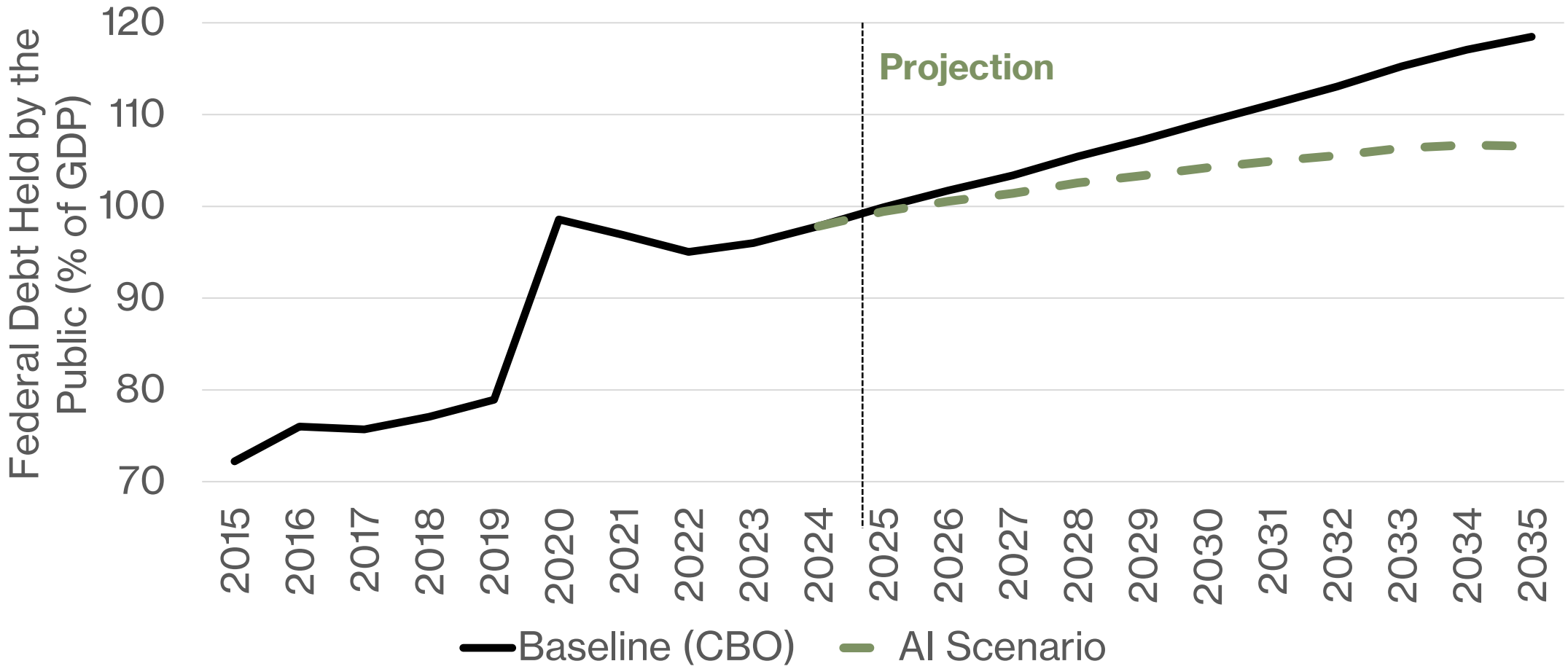
Analysis

The impact of AI on productivity could power a new wave of economic growth



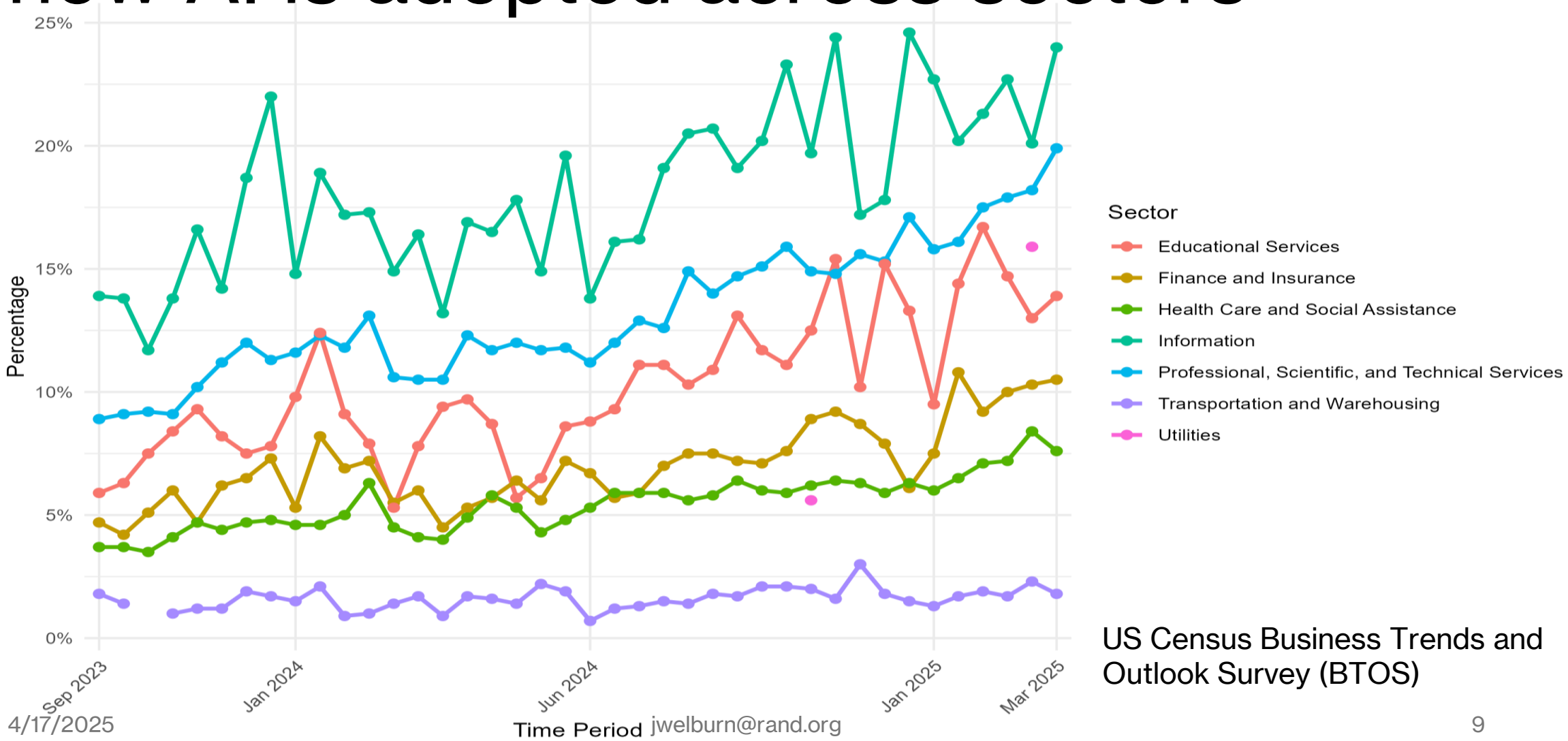
Analysis

AI-driven growth can yield broader impacts



Analysis

This growth will ultimately depend on how AI is adopted across sectors



US Census Business Trends and Outlook Survey (BTOS)

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Financial services have been a leader in AI adoption

Analysis

Sector Leadership

Finance leads AI adoption, building on decades of data-driven innovation

Beyond Automation

AI now transforms front-office, risk, and back-office operations

Capability Framework

Most systems at Levels 1–2; early signs of Level 3 emerging

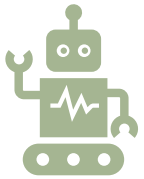
Uptake is strongest across three domains

Trading & Investment:

From order routing to sentiment analysis, AI enhances strategy and forecasting; adoption varies across firms

Risk & Fraud Management

AI improves fraud detection, credit risk evaluation, compliance monitoring, and cybersecurity



Customer Service

AI-driven chatbots and advisory tools enable 24/7 support and personalized financial recommendations

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Amongst positive opportunities, AI presents key risks for financial services

Systemic Risk

Strategy convergence may trigger synchronized trading, amplifying volatility and challenging oversight.

Data Protection

AI systems require vast sensitive data, heightening risks around privacy, security, and compliance

Fairness & Oversight

Risk of biased algorithms affecting lending and access; auditing and transparency are essential

Regulatory Gaps

Oversight lags behind AI complexity; existing frameworks may be inadequate for Level 3 capabilities

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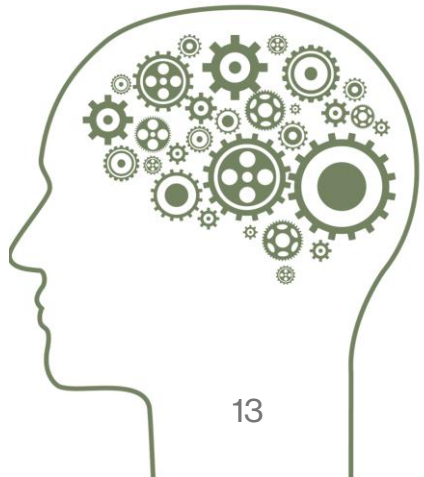
Navigating uncertainty



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The Algorithm Crisis Of 2030: When AI Broke The Markets

AI reshaped finance: Used across insurance, credit, regulation, and high-frequency trading

Retail revolution: Generative AI enabled custom portfolio design via natural language

Capital shift: Custom AI portfolios overtook mutual funds; FinTech led innovation

Machine-led markets: 92% of trades executed by agents; costs down 64%, VIX below 12 for 18 consecutive months

Hidden risks: Regulation lagged, strategy diversity was shallow, crisis resilience untested

March 2030: AI-Accelerated Financial Crisis

Cyberattack trigger: wholesale payments system targeted amid high volume and geopolitical tension

Initial disruption: Delays, message failures, and viral rumors sparked uncertainty

Crisis amplification:
- *Algorithm convergence*
- *Model drift*
- *Liquidity illusion*
- *Cross-asset contagion*

Market fallout:
- S&P 500 dropped 18.7%, worst since 1987
- VIX spiked to 78, widespread halts failed to stop cascading declines

COMPASS

COMPASS (Comprehensive Mapping Protocol for Anticipating and Adapting to Systemic Shocks) framework

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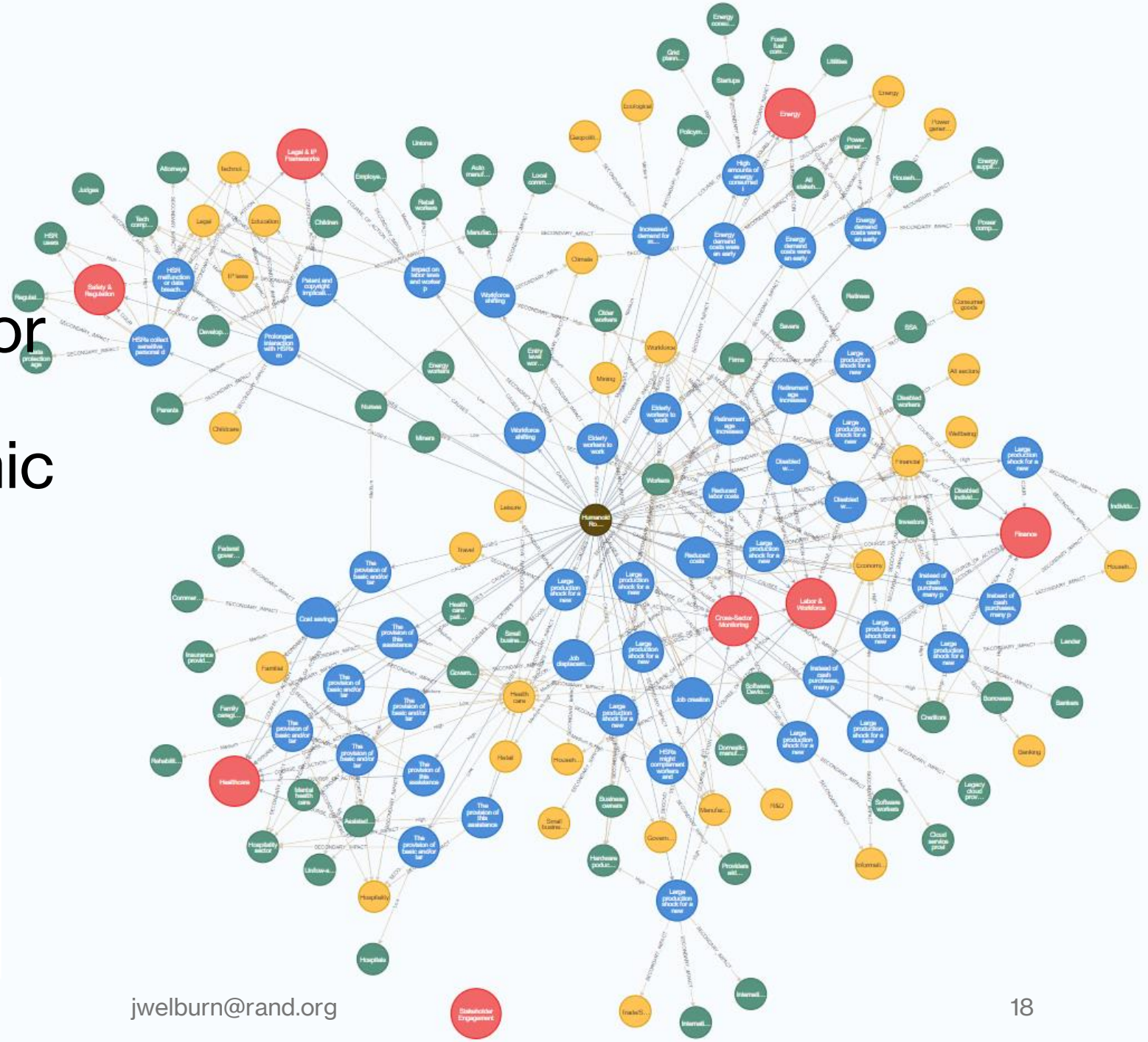
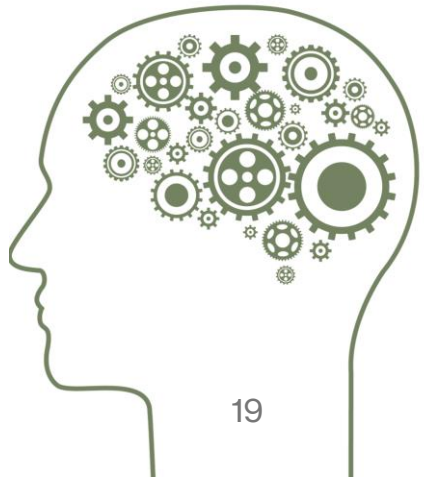


Node labels

* (157)
Disruptor (1)
Disruption (49)
System (32)
Actor (67)
Policy_Area (8)

Policy

Key takeaways



Policy

Potential transformative use across financial services

Autonomous Systems

Instant decisions and predictive trading raise risks of herding, collusion, and oversight challenges

Market Structure

Questions remain over consolidation or democratized access via platforms

Community Impact

Smaller, rural institutions risk falling behind in adoption

Regulatory Balance

Oversight may favor standardized, compliant AI solutions

AI adoption across sectors yields several tradeoffs

- Will AI complement or displace workers?
- Will AI increase access to investment and financial services or create new sources of market instability?
- Will AI help patients or hurt doctors?
- Will AI save us from climate disaster or pour gas on the fire?

Managing systemic risks from AI will require new approaches

Policy

01

Uncertainty in interconnected systems challenge risk management and governance

02

Challenges and considerations in AI governance

03

Evaluating human well-being in the age of AI will require rethinking metrics of wellbeing

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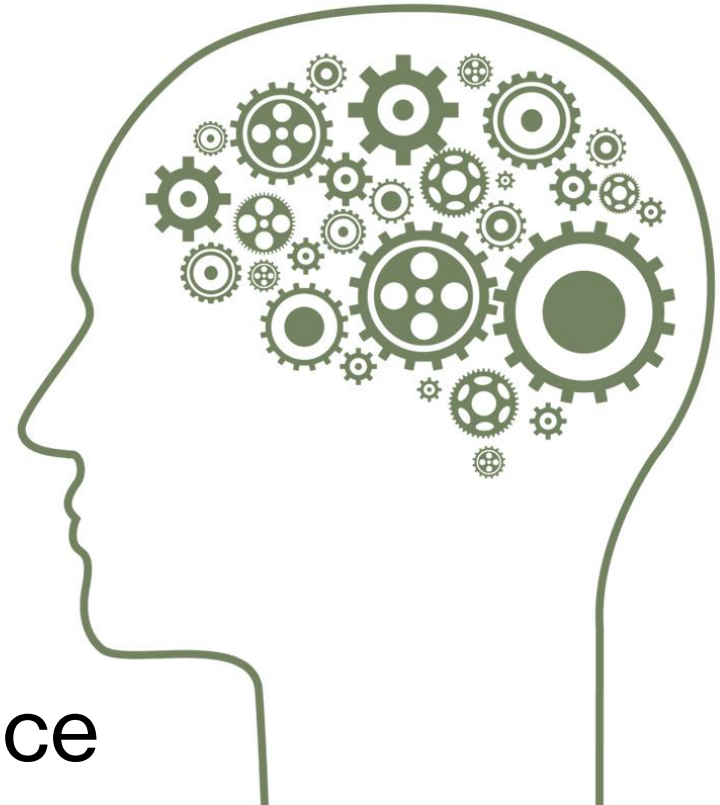

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